

Henry Ford Health Publication List – May 2023

This bibliography aims to recognize the scholarly activity and provide ease of access to journal articles, meeting abstracts, book chapters, books and other works published by Henry Ford Health personnel. Searches were conducted in PubMed, Embase, and Web of Science during the month, and then imported into EndNote for formatting. There are 152 unique citations listed this month, including 120 articles and 32 conference abstracts.

Articles are listed first, followed by [conference abstracts](#). Because of various limitations, this does not represent an exhaustive list of all published works by Henry Ford Health authors.

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Articles

[Administration](#)

[Allergy and Immunology](#)

[Anesthesiology](#)

[Behavioral Health](#)

[Services/Psychiatry/Neuropsychology](#)

[Cardiology/Cardiovascular Research](#)

[Center for Health Policy and Health Services](#)

[Research](#)

[Center for Individualized and Genomic Medicine](#)

[Research](#)

[Dermatology](#)

[Diagnostic Radiology](#)

[Emergency Medicine](#)

[Endocrinology and Metabolism](#)

[Gastroenterology](#)

[Hematology-Oncology](#)

[Hospital Medicine](#)

[Hypertension and Vascular Research](#)

[Infectious Diseases](#)

[Internal Medicine](#)

[Ophthalmology and Eye Care](#)

[Services](#)

[Orthopedics/Bone and Joint Center](#)

[Otolaryngology – Head and Neck](#)

[Surgery](#)

[Pathology and Laboratory Medicine](#)

[Pediatrics](#)

[Pharmacy](#)

[Plastic Surgery](#)

[Public Health Sciences](#)

[Pulmonary and Critical Care](#)

[Medicine](#)

[Radiation Oncology](#)

[Research Administration](#)

[Sleep Medicine](#)

[Surgery](#)

[Urology](#)

Conference Abstracts

[Administration](#)

[Cardiology/Cardiovascular Research](#)

[Dermatology](#)

[Emergency Medicine](#)

[Gastroenterology](#)

[Hematology-Oncology](#)

[Infectious Diseases](#)

[Internal Medicine](#)

[Neurology](#)

[Orthopedics/Bone and Joint Center](#)

[Otolaryngology – Head and Neck](#)

[Surgery](#)

[Palliative Medicine](#)

[Pharmacy](#)

[Public Health Sciences](#)

[Radiation Oncology](#)

[Research Administration](#)

[Surgery](#)

[Urology](#)

Articles

Administration

Debbs J, Hannawi B, Peterson E, Gui H, Zeld N, Luzum JA, Sabbah HN, Snider J, Pinto YM, Williams LK, and Lanfear DE. Evaluation of a New Aptamer-Based Array for Soluble Suppressor of Tumorigenicity (ST2) and N-terminal Pro-B-Type Natriuretic Peptide (NTproBNP) in Heart Failure Patients. *J Cardiovasc Transl Res* 2023; Epub ahead of print. PMID: 37191882. [Full Text](#)

Center for Individualized and Genomic Medicine Research, Department of Internal Medicine, Henry Ford Hospital, Detroit, MI, USA.

Heart and Vascular Institute, Henry Ford Hospital, Detroit, MI, USA.

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BACKGROUND: Recent advances in multi-marker platforms offer faster data generation, but the fidelity of these methods compared to the ELISA is not established. We tested the correlation and predictive performance of SOMAscan vs. ELISA methods for NTproBNP and ST2. **METHODS:** Patients ≥ 18 years with heart failure and ejection fraction $< 50\%$ were enrolled. We tested the correlation between SOMA and ELISA for each biomarker and their association with outcomes. **RESULTS:** There was good correlation of SOMA vs. ELISA for ST2 ($\rho = 0.71$) and excellent correlation for NTproBNP ($\rho = 0.94$). The two versions of both markers were not significantly different regarding survival association. The two ST2 assays and NTproBNP assays were similarly associated with all-cause mortality and cardiovascular mortality. These associations remained statistically significant when adjusted for MAGGIC risk score (all $p < 0.05$). **CONCLUSION:** SOMAscan quantifications of ST2 and NTproBNP correlate to ELISA versions and carry similar prognosis.

Administration

Kachuri L, Mak ACY, Hu D, Eng C, Huntsman S, Elhawary JR, Gupta N, Gabriel S, Xiao S, Keys KL, Oni-Orisan A, Rodríguez-Santana JR, LeNoir MA, Borrell LN, Zaitlen NA, Williams LK, Gignoux CR, Burchard EG, and Ziv E. Gene expression in African Americans, Puerto Ricans and Mexican Americans reveals ancestry-specific patterns of genetic architecture. *Nat Genet* 2023; Epub ahead of print. PMID: 37231098. [Full Text](#)

Department of Epidemiology and Biostatistics, University of California, San Francisco, San Francisco, CA, USA.

Department of Epidemiology and Population Health, Stanford University, Stanford, CA, USA.

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We explored ancestry-related differences in the genetic architecture of whole-blood gene expression using whole-genome and RNA sequencing data from 2,733 African Americans, Puerto Ricans and Mexican Americans. We found that heritability of gene expression significantly increased with greater proportions of African genetic ancestry and decreased with higher proportions of Indigenous American ancestry, reflecting the relationship between heterozygosity and genetic variance. Among heritable protein-coding genes, the prevalence of ancestry-specific expression quantitative trait loci (anc-eQTLs) was 30% in African ancestry and 8% for Indigenous American ancestry segments. Most anc-eQTLs (89%) were driven by population differences in allele frequency. Transcriptome-wide association analyses of multi-ancestry summary statistics for 28 traits identified 79% more gene-trait associations using transcriptome prediction models trained in our admixed population than models trained using data from the Genotype-Tissue Expression project. Our study highlights the importance of measuring gene expression across large and ancestrally diverse populations for enabling new discoveries and reducing disparities.

Allergy and Immunology

McKee KS, Tang X, Tung I, Wu G, Alshawabkeh AN, Arizaga JA, Bastain TM, Brennan PA, Breton CV, Camargo CA, Cioffi CC, Cordero JF, Dabelea D, Deutsch AR, Duarte CS, Dunlop AL, Elliott AJ, Ferrara A, Karagas MR, Lester B, McEvoy CT, Meeker J, Neiderhiser JM, Herbstman J, Trasande L, O'Connor TG, Hipwell AE, Comstock SS, Smith PB, Newby KL, Jacobson LP, Parker CB, Gershon R, Cella D, Aschner J, Teitelbaum SL, Stroustrup A, Merhar S, Lampland A, Reynolds A, Hudak M, Pryhuber G, Moore P, Washburn L, Mansbach J, Spergel J, Stevenson M, Bauer C, Deoni S, Canino G, Croen L, Gern J, **Zoratti E**, Seroogy C, Bendixsen C, Bacharier L, Kattan M, Wood R, Rivera-Spoljaric K, Hartert T, Singh A, **Johnson C**, Gilliland F, Farzan S, Karr C, Mason A, Sathyanarayana S, Carter B, Marsit C, Pastyrnak S, Neal C, Smith L, Helderma J, Leve L, Ganiban J, Tepper R, Simhan H, **Barone C**, Kerver J, Paneth N, McKane P, Schantz S, Woodruff T, Stanford J, Wright R, Bosquet-Enlow M, Huddleston K, Bush N, Nguyen R, and Barrett E. Perinatal Outcomes During vs. Prior to the COVID-19 Pandemic and the Role of Maternal Depression and Perceived Stress: A Report from the ECHO Program. *Am J Perinatol* 2023. PMID: Not assigned. [Request Article](#)

S.S. Comstock, Department of Food Science & Human Nutrition, Michigan State University, 469 Wilson Rd, Trout Room 204, East Lansing, MI, United States

Objective: We sought to evaluate the impact of the COVID-19 pandemic on perinatal outcomes while accounting for maternal depression or perceived stress and to describe COVID-specific stressors, including changes in prenatal care, across specific time periods of the pandemic. Study Design: Data dyads from 41 cohorts from the National Institutes of Health Environmental influences on Child Health Outcomes Program (N=2983) were used to compare birth outcomes before and during the pandemic (n=2355), and a partially overlapping sample (n=1490) responded to a COVID-19 questionnaire. Psychosocial stress was defined using prenatal screening for depression and perceived stress.

Propensity-score matching and general estimating equations with robust variance estimation were used to estimate the pandemic's effect on birth outcomes. Results: Symptoms of depression and perceived stress during pregnancy were similar prior to and during the pandemic, with nearly 40% of participants reporting mild to severe stress, and 24% reporting mild depression to severe depression. Gestations were shorter during the pandemic (B=-0.33 weeks, p=0.025), and depression was significantly associated with shortened gestation (B=-0.02 weeks, p=0.015) after adjustment. Birth weights were similar (B=-28.14 g, p=0.568), but infants born during the pandemic had slightly larger birth weights for gestational age at delivery than those born before the pandemic (B=0.15 z-score units, p=0.041). More women who gave birth early in the pandemic reported being moderately or extremely distressed about changes to their prenatal care and delivery (45%) compared with those who delivered later in the pandemic. A majority (72%) reported somewhat to extremely negative views of COVID-19 on their life. Conclusions: In this national cohort, we detected no effect of COVID-19 on prenatal depression or perceived stress. However, experiencing the COVID-19 pandemic in pregnancy was associated with decreases in gestational age at birth as well as distress about changes in prenatal care early in the pandemic.

Allergy and Immunology

Nanishi M, Chandran A, Li XH, Stanford JB, Alshawabkeh AN, Aschner JL, Dabelea D, Dunlop AL, Elliott AJ, Gern JE, Hartert T, Herbstman J, Hershey GKK, Hipwell AE, Karagas MR, Karr CJ, Leve LD, Litonjua AA, McEvoy CT, Miller RL, Oken E, O'Shea TM, Paneth N, Weiss ST, Wright RO, Wright RJ, Carroll KN, Zhang XY, Zhao Q, **Zoratti E**, Camargo CA, Hasegawa K, and Environm Influences Child H. Association of Severe Bronchiolitis during Infancy with Childhood Asthma Development: An Analysis of the ECHO Consortium. *Biomedicines* 2023; 11(1). PMID: Not assigned. [Full Text](#)

Anesthesiology

Jena N, Patel K, Desai R, **Siddiqui N**, Ahluwalia G, Halabi AR, Schwartz C, and Krishnan S. Surgical Aortic Valve Replacement to Treat Prosthetic Valve Endocarditis After Valve-in-Valve Transcatheter Aortic Valve Replacement. *Cureus* 2023; 15(4):e38021. PMID: 37228546. [Full Text](#)

Cardiovascular Medicine, St. Joseph Mercy Oakland Hospital, Pontiac, USA.

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Prosthetic valve endocarditis (PVE) is an uncommon complication after heart valve replacement surgery that can result in increased morbidity and mortality. Current guidelines for management of PVE recommend antibiotic therapy followed by surgical valve replacement. The number of aortic valve replacements is expected to rise in the coming years with the expanded indications for use of transcatheter aortic valve replacement (TAVR) in patients with low, intermediate, and high surgical risk, as well as in patients with a failed aortic bioprosthetic valve. Current guidelines do not address the use of valve-in-valve (ViV) TAVR for management of PVE in patients who are at high risk for surgical intervention. The authors present a case of a patient with aortic valve PVE after surgical aortic valve replacement (SAVR); he was treated with valve-in-valve (ViV) TAVR due to the high surgical risk. The patient was discharged, but he returned to the hospital with PVE and valve dehiscence 14 months after ViV TAVR, after which he successfully underwent re-operative SAVR.

Behavioral Health Services/Psychiatry/Neuropsychology

Debbs J, Hannawi B, Peterson E, Gui H, Zeld N, Luzum JA, Sabbah HN, Snider J, Pinto YM, **Williams LK**, and **Lanfear DE**. Evaluation of a New Aptamer-Based Array for Soluble Suppressor of Tumorigenicity (ST2) and N-terminal Pro-B-Type Natriuretic Peptide (NTproBNP) in Heart Failure Patients. *J Cardiovasc Transl Res* 2023; Epub ahead of print. PMID: 37191882. [Full Text](#)

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BACKGROUND: Recent advances in multi-marker platforms offer faster data generation, but the fidelity of these methods compared to the ELISA is not established. We tested the correlation and predictive performance of SOMAscan vs. ELISA methods for NTproBNP and ST2. **METHODS:** Patients ≥ 18 years with heart failure and ejection fraction $< 50\%$ were enrolled. We tested the correlation between SOMA and ELISA for each biomarker and their association with outcomes. **RESULTS:** There was good correlation of SOMA vs. ELISA for ST2 ($\rho = 0.71$) and excellent correlation for NTproBNP ($\rho = 0.94$). The two versions of both markers were not significantly different regarding survival association. The two ST2 assays and NTproBNP assays were similarly associated with all-cause mortality and cardiovascular mortality. These associations remained statistically significant when adjusted for MAGGIC risk score (all $p < 0.05$). **CONCLUSION:** SOMAscan quantifications of ST2 and NTproBNP correlate to ELISA versions and carry similar prognosis.

Behavioral Health Services/Psychiatry/Neuropsychology

Guzman C, Zaclli A, and **Molinari J**. Streptococcus cristatus bacteremia in a patient with poor oral hygiene: a case report. *J Med Case Rep* 2023; 17(1):218. PMID: 37194080. [Full Text](#)

Department of Psychiatry, Henry Ford Health System, 2799 W Grand Blvd., Detroit, MI, 48202, USA. cguzman2@hfhs.org.
Department of Internal Medicine, Detroit Medical Center, Detroit, MI, USA.
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BACKGROUND: Streptococcus cristatus is a member of the Mitis streptococcus group. Like other members of this group, it resides on mucosal surfaces of the oral cavity. However, little is known about its ability to cause disease as there are only a handful of cases in the literature. Two of these cases involved infective endocarditis with significant complications. However, these cases involved additional microbes, limiting the inferences about the pathogenicity of Streptococcus cristatus. **CASE PRESENTATION:** A 59-year-old African American male with end-stage cryptogenic cirrhosis and ascites presented with fatigue and confusion. A paracentesis was negative for spontaneous bacterial peritonitis, but two separate blood cultures grew Streptococcus cristatus. Our patient had a history of dental caries and poor oral hygiene, which were likely the source of the infection. Echocardiograms revealed new aortic regurgitation, indicating "possible endocarditis" per the Modified Duke Criteria. However, since his clinical picture and cardiac function were reassuring, we elected against treatment for infective endocarditis. He was treated for bacteremia with a 2-week course of cephalosporins consisting of 8 days of ceftriaxone, transitioning to cefpodoxime after discharge. Despite having end-stage liver disease, our patient did not experience any significant complications from the infection. **CONCLUSION:** A patient with end-stage cirrhosis and poor oral hygiene developed bacteremia with an oral bacterium called Streptococcus cristatus. Unlike previous cases in literature, our patient did not meet criteria for a definitive diagnosis of infective endocarditis, and he experienced no other complications from the infection. This suggests coinfectants may have been primarily responsible for the severe cardiac sequelae in prior cases, whereas isolated Streptococcus cristatus infection may be relatively mild.

Behavioral Health Services/Psychiatry/Neuropsychology

MacLean L. Clinician Well-Being: Addressing Distress and Burnout. *Adv Psych Behav Health* 2023. PMID: Not assigned. [Full Text](#)

Behavioral Health Services/Psychiatry/Neuropsychology

Miller-Matero LR, Ross K, DePascale E, Arellano C, Zelenak L, Braciszewski JM, Hecht LM, Haley EN, Loree AM, and Carlin AM. Post-surgical cannabis use is associated with weight loss among

individuals up to 4 years after bariatric surgery. *Surg Endosc* 2023; Epub ahead of print. PMID: 37202524. [Full Text](#)

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Department of Surgery, Henry Ford Health, Detroit, MI, USA.

INTRODUCTION: Although cannabis is known to stimulate appetite, it is not clear whether cannabis use may impact weight loss outcomes following bariatric surgery. Although some work has suggested that pre-surgical cannabis use is not associated with post-surgical weight loss, the role of post-surgical cannabis use has not yet been examined. The purpose of this study was to measure pre- and post-surgical cannabis use and determine whether cannabis use was associated with weight loss outcomes following bariatric surgery. **METHODS:** Patients who underwent bariatric surgery over a 4-year period at a single health care system were invited to complete a survey regarding pre- and post-surgical cannabis use and report their current weight. Pre-surgical weight and BMI were extracted from medical records to calculate change in BMI (Δ BMI), percent total weight loss (%TWL), percent excess weight loss (%EWL), whether participants experienced a successful weight loss outcome, and whether participants had weight recurrence. **RESULTS:** Among all participants (N = 759), 10.7% and 14.5% engaged in pre- and post-surgical cannabis use, respectively. Pre-surgical cannabis use was not associated with any weight loss outcomes ($p > 0.05$). Any post-surgical cannabis use was associated with lower %EWL ($p = 0.04$) and greater likelihood of weight recurrence ($p = 0.04$). Weekly cannabis use was associated with lower %EWL ($p = 0.003$), lower %TWL ($p = 0.04$), and a lower likelihood of having a successful weight loss outcome ($p = 0.02$). **CONCLUSIONS:** Although pre-surgical cannabis use may not predict weight loss outcomes, post-surgical cannabis was associated with poorer weight loss outcomes. Frequent use (i.e., weekly) may be especially problematic. Providers should consider screening patients for cannabis use and educate them about the potential impact of postoperative cannabis use on weight loss following bariatric surgery.

Behavioral Health Services/Psychiatry/Neuropsychology

Sala-Hamrick KJ, Braciszewski JM, Yeh HH, Zelenak L, Westphal J, Beebani G, Frank C, Simon GE, Owen-Smith AA, Rossom RC, Lynch F, Lu CY, Waring SC, Harry ML, Beck A, Daida YG, and Ahmedani BK. Diagnosed Posttraumatic Stress Disorder and Other Trauma-Associated Stress Disorders and Risk for Suicide Mortality. *Psychiatr Serv* 2023; Epub ahead of print. PMID: 37143334. [Request Article](#)

Center for Health Policy and Health Services Research (Sala-Hamrick, Braciszewski, Yeh, Zelenak, Westphal, Ahmedani) and Department of Psychiatry (Braciszewski, Beebani, Frank, Ahmedani), Henry Ford Health System, Detroit; Kaiser Permanente Washington, Seattle (Simon); Department of Health Policy and Behavioral Sciences, School of Public Health, Georgia State University, and Center for Clinical and Outcomes Research, Kaiser Permanente Georgia, Atlanta (Owen-Smith); HealthPartners Institute, Bloomington, Minnesota (Rossom); Center for Health Research, Kaiser Permanente Northwest, Portland, Oregon (Lynch); Department of Population Medicine, Harvard Medical School, and Harvard Pilgrim Health Care Institute, Boston (Lu); Essentia Institute of Rural Health, Essentia Health, Duluth, Minnesota (Waring, Harry); Institute for Health Research, Kaiser Permanente Colorado, Denver (Beck); Kaiser Permanente Hawaii, Honolulu (Daida).

OBJECTIVE: Strong evidence exists for posttraumatic stress disorder (PTSD) as a risk factor for suicidal thoughts and behaviors across diverse populations. However, few empirical studies have examined PTSD and other trauma-associated stress disorders as risk factors for suicide mortality among health system populations. This study aimed to assess trauma-associated stress diagnoses as risk factors for suicide mortality in a U.S. health system population. **METHODS:** This case-control, matched-design study examined individuals who died by suicide between 2000 and 2015 and had received care from nine U.S. health systems affiliated with the Mental Health Research Network (N=3,330). Individuals who died by

suicide were matched with individuals from the general health system population (N=333,000): 120 individuals with PTSD who died by suicide were matched with 1,592 control group members, 84 with acute reaction to stress were matched with 2,218 control individuals, and 331 with other stress reactions were matched with 8,174 control individuals. RESULTS: After analyses were adjusted for age and sex, individuals with any trauma-associated stress condition were more likely to have died by suicide. Risk was highest among individuals with PTSD (adjusted OR [AOR]=10.10, 95% CI=8.31-12.27), followed by those with other stress reactions (AOR=5.38, 95% CI=4.78-6.06) and those with acute reaction to stress (AOR=4.49, 95% CI=3.58-5.62). Patterns of risk remained the same when the analyses were adjusted for any comorbid psychiatric condition. CONCLUSIONS: All trauma-associated stress disorders are risk factors for suicide mortality, highlighting the importance of health system suicide prevention protocols that consider the full spectrum of traumatic stress diagnoses.

Cardiology/Cardiovascular Research

Abraham B, Farina JM, Fath A, Abdou M, Elbanna M, Suppah M, Sleem M, Eldaly A, Aly M, **Megaly M**, Agasthi P, Chao CJ, Fortuin D, Alsidawi S, Ayoub C, Alkhoul M, El Sabbagh A, Holmes D, Brilakis ES, and Arsanjani R. The impact of moderate aortic stenosis in acute myocardial infarction: A multicenter retrospective study. *Catheter Cardiovasc Interv* 2023; Epub ahead of print. PMID: 37146200. [Full Text](#)

Department of Cardiology, Mayo Clinic Hospital, Phoenix, Arizona, USA.

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Department of Cardiology, Henry Ford Hospital, Detroit, Michigan, USA.

Department of Cardiology, Mayo Clinic Hospital, Rochester, Minnesota, USA.

Department of Cardiology, Minneapolis Heart Institute and Minneapolis Heart Institute Foundation, Minneapolis, Minnesota, USA.

BACKGROUND: Aortic stenosis (AS) is associated with myocardial ischemia through different mechanisms and may impair coronary arterial flow. However, data on the impact of moderate AS in patients with acute myocardial infarction (MI) is limited. AIMS: This study aimed to investigate the impact of moderate AS in patients presenting with acute myocardial infarction (MI). METHODS: We conducted a retrospective analysis of all patients who presented with acute MI to all Mayo Clinic hospitals, using the Enterprise Mayo PCI Database from 2005 to 2016. Patients were stratified into two groups: moderate AS and mild/no AS. The primary outcome was all cause mortality. RESULTS: The moderate AS group included 183 (13.3%) patients, and the mild/no AS group included 1190 (86.7%) patients. During hospitalization, there was no difference between both groups in mortality. Patients with moderate AS had higher in-hospital congestive heart failure (CHF) (8.2% vs. 4.4%, $p = 0.025$) compared with mild/no AS patients. At 1-year follow-up, patients with moderate AS had higher mortality (23.9% vs. 8.1%, $p < 0.001$) and higher CHF hospitalization (8.3% vs. 3.7%, $p = 0.028$). In multivariate analysis, moderate AS was associated with higher mortality at 1-year (odds ratio 2.4, 95% confidence interval [1.4-4.1], $p = 0.002$). In subgroup analyses, moderate AS increased all-cause mortality in STEMI and NSTEMI patients. CONCLUSION: The presence of moderate AS in acute MI patients was associated with worse clinical outcomes during hospitalization and at 1-year follow-up. These unfavorable outcomes highlight the need for a close follow-up of these patients and for timely therapeutic strategies to best manage these coexisting conditions.

Cardiology/Cardiovascular Research

Debbs J, Hannawi B, Peterson E, Gui H, Zeld N, Luzum JA, Sabbah HN, Snider J, Pinto YM, **Williams LK**, and **Lanfear DE**. Evaluation of a New Aptamer-Based Array for Soluble Suppressor of Tumorigenicity (ST2) and N-terminal Pro-B-Type Natriuretic Peptide (NTproBNP) in Heart Failure Patients. *J Cardiovasc Transl Res* 2023; Epub ahead of print. PMID: 37191882. [Full Text](#)

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Cardiology/Cardiovascular Research

Garcia S, Ye J, Webb J, Reardon M, Kleiman N, Goel S, Hatab T, Fam N, Peterson M, Liauw S, **Frisoli TM**, Bashir H, Paige D, Rock D, Schmidt C, Jollis JG, and Kereiakes DJ. Transcatheter Treatment of Native Aortic Valve Regurgitation: The North American Experience with a Novel Device. *JACC Cardiovasc Interv* 2023; Epub ahead of print. PMID: 37212431. [Full Text](#)

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BACKGROUND: Transcatheter treatment of native aortic valve regurgitation (AR) has been limited by anatomic factors. No transcatheter device has received U.S. regulatory approval for the treatment of AR. **OBJECTIVES:** To describe the compassionate use experience in North America with a dedicated transcatheter device (J-Valve, J.C. Medical, Burlingame, CA). **METHODS:** Multicenter, observational registry of compassionate use cases of J-Valve for the treatment of patients with severe symptomatic aortic regurgitation and elevated surgical risk in North America. The J-Valve consists of a self-expanding nitinol frame, bovine pericardial leaflets, and a valve locating feature. The available size matrix (5 sizes) can treat a wide range of anatomies (minimum/maximal annular perimeters 57-109 mm). **RESULTS:** A total of 27 patients (median age 81 [72-85], 81% high surgical risk, 96% NYHA FC III-IV) with native valve AR were treated with J-Valve during the study period (2018-2022). Procedural success (J-Valve delivered to the intended location without need for surgical conversion or a second THV) was 81% (22 out of 27 cases) in the overall experience and 100% in the last 15 cases. Two cases required conversion to surgery in the early experience leading to changes in valve design. At 30-days, there were 1 death, 1 stroke, 3 new pacemakers (13%), and 88% of patients were NYHA FC I-II. No patient had residual AR \geq moderate at 30-days. **CONCLUSION:** J-Valve appears to provide a safe and effective alternative to surgery in patients with pure aortic regurgitation and elevated/prohibitive surgical risk.

Cardiology/Cardiovascular Research

Gupta K, Spertus JA, Birmingham M, Gosch KL, Husain M, Kitzman DW, Pitt B, Shah SJ, Januzzi JL, Lingvay I, Butler J, Kosiborod M, and **Lanfeard DE**. Racial Differences in Quality of Life in Patients With Heart Failure Treated With Sodium-Glucose Cotransporter 2 Inhibitors: A Patient-Level Meta-Analysis of the CHIEF-HF, DEFINE-HF, and PRESERVED-HF Trials. *Circulation* 2023; Epub ahead of print. PMID: 37191040. [Full Text](#)

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BACKGROUND: Health status outcomes, including symptoms, function, and quality of life, are worse for Black compared with White patients with heart failure. Sodium-glucose cotransporter 2 inhibitors (SGLT2is) reduce cardiovascular mortality and improve health status in patients with heart failure, but whether the health status benefit of SGLT2is is similar across races is not established. The objective of this study was to compare the treatment effect of SGLT2is (versus placebo) on health status for Black compared with White patients with heart failure. **METHODS:** We combined patient-level data from 3 randomized clinical trials of SGLT2is: DEFINE-HF (Dapagliflozin Effect on Symptoms and Biomarkers in Patients With Heart Failure; n=263), PRESERVED-HF (Dapagliflozin in Preserved Ejection Fraction Heart Failure; n=324), and CHIEF-HF (A Study on Impact of Canagliflozin on Health Status, Quality of Life, and Functional Status in Heart Failure; n=448). These 3 United States-based trials enrolled a substantial proportion of Black patients, and each used the Kansas City Cardiomyopathy Questionnaire (KCCQ) to measure health status at baseline and after 12 weeks of treatment. Among 1035 total participants, selecting self-identified Black and White patients with complete information yielded a final analytic cohort of 935 patients. The primary endpoint was KCCQ Clinical Summary score. Twelve-week change in KCCQ with SGLT2is versus placebo was compared between Black and White patients by testing the interaction between race and treatment using multivariable linear regression models adjusted for trial, baseline KCCQ (as a restricted cubic spline), race, and treatment. The data that support the findings of this study are available from the corresponding author upon reasonable request. **RESULTS:** Among 935 participants, 236 (25%) self-identified as Black, and 469 (50.2%) were treated with an SGLT2i. Treatment with an SGLT2i, compared with placebo, resulted in KCCQ Clinical Summary score improvements at 12 weeks of +4.0 points (95% CI, 1.7-6.3; P=0.0007) in White patients and +4.7 points (95% CI, 0.7-8.7; P=0.02) in Black patients, with no significant interaction by race and treatment (P=0.76). Other KCCQ scales showed similar results. **CONCLUSIONS:** Treatment with an SGLT2i resulted in consistent and significant improvements in health status for both Black and White patients with heart failure.

Cardiology/Cardiovascular Research

Karacsonyi J, Kostantinis S, Simsek B, **Basir M, Megaly M**, Ali Z, Kirtane A, McEntegart M, Brilakis ES, and **Alaswad K**. Intravascular Imaging Use in Percutaneous Coronary Interventions of Chronic Total Occlusions. *J Invasive Cardiol* 2023; 35(5):E265-e268. PMID: 37169391. [Request Article](#)

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BACKGROUND: Intravascular ultrasound (IVUS) can assist percutaneous coronary intervention (PCI) of chronic total occlusions (CTO). **METHODS:** We analyzed 8,983 CTO PCIs performed in 8,771 patients between 2012 and 2022 at 39 centers. **RESULTS:** Overall, IVUS was used in 44.5% of the cases, for crossing in 11.5% and for stent optimization in 33.1%. IVUS for stent optimization was used more often for complex lesions with higher prevalence of calcification (51.2% vs 34.3%; P<.001); was associated with lower air kerma radiation dose (1.78 [1.00, 3.09] vs 2.30 [1.35, 3.91] min, P<.001) and contrast volume (190 [138, 258] vs 220 [160, 300] ml, P<.001). Among cases with successful guidewire crossing, those that used IVUS for stent optimization had higher technical (99.3% vs 96.3%; P<.001) and procedural (96.1% vs 94.6%, P=.002) success rates and similar major adverse complication event rates (2.04% vs 1.62%; P=.176). The use of IVUS for stent optimization significantly increased over time. **CONCLUSION:**

In a contemporary, multicenter registry, IVUS was used in 44.5% and its use for stent optimization significantly increased over time. Cases where IVUS was used for stent optimization had higher technical and procedural success and similar risk of complications compared with cases where IVUS was not used for stent optimization.

Cardiology/Cardiovascular Research

Kodali SK, Hahn RT, Davidson CJ, Narang A, Greenbaum A, Gleason P, Kapadia S, Miyasaka R, Zahr F, Chadderdon S, Smith RL, Grayburn P, Kipperman RM, Marcoff L, Whisenant B, Gonzales M, Makkar R, Makar M, **O'Neill W, Wang DD**, Gray WA, Abramson S, Hermiller J, Mitchel L, Lim DS, Fowler D, Williams M, Pislaru SV, Dahou A, Mack MJ, Leon MB, and Eleid MF. 1-Year Outcomes of Transcatheter Tricuspid Valve Repair. *J Am Coll Cardiol* 2023; 81(18):1766-1776. PMID: 37137586. [Full Text](#)

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BACKGROUND: Surgical management of isolated tricuspid regurgitation (TR) is associated with high morbidity and mortality, thereby creating a significant need for a lower-risk transcatheter solution. **OBJECTIVES:** The single-arm, multicenter, prospective CLASP TR (Edwards PASCAL TrAnScatheter Valve RePair System in Tricuspid Regurgitation [CLASP TR] Early Feasibility Study) evaluated 1-year outcomes of the PASCAL transcatheter valve repair system (Edwards Lifesciences) to treat TR. **METHODS:** Study inclusion required a previous diagnosis of severe or greater TR and persistent symptoms despite medical treatment. An independent core laboratory evaluated echocardiographic results, and a clinical events committee adjudicated major adverse events. The study evaluated primary safety and performance outcomes, with echocardiographic, clinical, and functional endpoints. Study investigators report 1-year all-cause mortality and heart failure hospitalization rates. **RESULTS:** Sixty-five patients were enrolled: mean age of 77.4 years; 55.4% female; and 97.0% with severe to torrential TR. At 30 days, cardiovascular mortality was 3.1%, the stroke rate was 1.5%, and no device-related reinterventions were reported. Between 30 days and 1 year, there were an additional 3 cardiovascular deaths (4.8%), 2 strokes (3.2%), and 1 unplanned or emergency reintervention (1.6%). One-year postprocedure, TR severity significantly reduced ($P < 0.001$), with 31 of 36 (86.0%) patients achieving moderate or less TR; 100% had at least 1 TR grade reduction. Freedom from all-cause mortality and heart failure hospitalization by Kaplan-Meier analyses were 87.9% and 78.5%, respectively. Their New York Heart Association functional class significantly improved ($P < 0.001$) with 92% in class I or II, 6-minute walk distance increased by 94 m ($P = 0.014$), and overall Kansas City Cardiomyopathy Questionnaire scores improved by 18 points ($P < 0.001$). **CONCLUSIONS:** The PASCAL system demonstrated low complication and high survival rates, with significant and sustained improvements in TR, functional status, and quality of life at 1 year. (Edwards PASCAL TrAnScatheter Valve RePair System in Tricuspid Regurgitation [CLASP TR] Early Feasibility Study [CLASP TR EFS]; NCT03745313).

Cardiology/Cardiovascular Research

Kostantinis S, Rempakos A, Simsek B, Karacsonyi J, Allana SS, **Alaswad K, Basir MB**, Krestyaninov O, Khelinskii D, Gorgulu S, Davies RE, Benton SM, Khatri JJ, Poommipanit P, Choi JW, Jaber WA, Rinfret S, Nicholson W, Aygul N, Altunkeser BB, ElGuindy AM, Abi Rafeh N, Goktekin O, Mastrodemos OC, Rangan BV, Sandoval Y, Burke MN, and Brilakis ES. Aortocoronary dissection during percutaneous coronary interventions for chronic total occlusion: Insights from the PROGRESS-CTO registry. *Catheter Cardiovasc Interv* 2023; Epub ahead of print. PMID: 37172209. [Full Text](#)

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BACKGROUND: Aortocoronary dissection is a potentially serious complication of chronic total occlusion (CTO) percutaneous coronary intervention (PCI). **METHODS:** We examined the incidence, mechanisms, treatment, and outcomes of aortocoronary dissection among 12,117 CTO PCIs performed between 2012 and 2022 in a large multicenter CTO PCI registry. **RESULTS:** The incidence of aortocoronary dissection was 0.2% (n = 27). Most aortocoronary dissections occurred in the right coronary artery (96.3%, n = 26). The baseline clinical characteristics of patients with and without aortocoronary dissection were similar, except for dyslipidemia, which was less common in patients with aortocoronary dissection (70.4% vs. 86.0%; p = 0.019). The retrograde approach was used more commonly among cases complicated by aortocoronary dissection (59.3% vs. 31.0%; p = 0.002). Technical (74.1% vs. 86.6%; p = 0.049) and procedural (70.4% vs. 85.2%; p = 0.031) success rates were lower among aortocoronary dissection cases, with a similar incidence of in-hospital major adverse cardiovascular events (3.7% vs. 2.0%; p = 0.541). Of the 27 patients with aortocoronary dissection, 19 (70.4%) were treated with ostial stenting and 8 (29.6%) were treated conservatively without subsequent adverse clinical outcomes. No patients required emergency surgery. Follow-up was available for 22 patients (81.5%): during a mean follow up of 767 (\pm 562) days, the incidence of in-stent restenosis was 11.1% (n = 3). **CONCLUSIONS:** Aortocoronary dissection occurred in 0.2% of CTO PCIs performed by experienced operators, was associated with lower technical and procedural success, and was treated most commonly with ostial stenting. None of the patients required emergency cardiac surgery.

Cardiology/Cardiovascular Research

Lama von Buchwald C, Gonzalez PE, O'Neill B, Wang DD, Frisoli T, O'Neill WW, and Villablanca PA. Percutaneous Retrieval of an Aortic Valve Vegetation Causing Severe Regurgitation and Cardiogenic Shock. *JACC Cardiovasc Interv* 2023; 16(10):1301-1303. PMID: 37140503. [Full Text](#)

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Cardiology/Cardiovascular Research

O'Neill BP, and **Wang DD**. Pre-CT Planning in LAAO: Time to Pass the Probe. *JACC Cardiovasc Interv* 2023; Epub ahead of print. PMID: 37140502. [Full Text](#)

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Cardiology/Cardiovascular Research

Overstreet B, Ward-Ritacco C, Neric F, **Brawner CA**, Thompson B, Hargens T, and Thompson W. Technical Requirements for Clinical Exercise Physiologists as Qualified Health Professionals. *ACSMs Health Fit J* 2023; 27(2):20-26. PMID: Not assigned. [Full Text](#)

Cardiology/Cardiovascular Research

Rempakos A, Kostantinis S, Simsek B, Karacsonyi J, Choi JW, Poommipanit P, Khatri JJ, Jaber W, Rinfret S, Nicholson W, Gorgulu S, Jaffer FA, Chandwaney R, Ybarra LF, Bagur R, **Alaswad K**, Krestyaninov O, Khelimskii D, Karpaliotis D, Uretsky BF, Soylu K, Yildirim U, Potluri S, Al-Azizi KM, Rangan BV, Mastrodomos OC, Allana S, Sandoval Y, Burke MN, and Brilakis ES. Procedural Time and Outcomes of Chronic Total Occlusion Percutaneous Coronary Intervention. *Am J Cardiol* 2023; 197:55-64. PMID: 37156067. [Full Text](#)

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Chronic total occlusion (CTO) percutaneous coronary interventions (PCIs) can be lengthy procedures. We sought to investigate the effect of procedural time on CTO PCI outcomes. We examined the procedural time required for the various steps of CTO PCI in 6,442 CTO PCIs at 40 US and non-US centers between 2012 and 2022. The mean and median procedure times were 129 ± 76 and 112 minutes, respectively, with no significant change over time. The median times from access to wire insertion, guidewire manipulation time, and post crossing were 20, 32, and 53 minutes, respectively. Lesions crossed in <30 minutes were less complex, as reflected by lower Japanese CTO score (1.89 ± 1.19 , $p < 0.001$) than lesions that were not successfully crossed (2.88 ± 1.22) and lesions that were crossed in ≥ 30 minutes (2.85 ± 1.13). The likelihood of successful crossing if crossing was not achieved after 30, 90, and 180 minutes were a 76.7%, 60.7%, and 42.7%, respectively. The parameters independently associated with ≥ 30 minutes guidewire manipulation time in patients with a primary antegrade approach included left anterior descending target vessel, proximal cap ambiguity, blunt/no stump, occlusion length, previous

failed attempt, medium/severe calcification, and medium/severe tortuosity. The mean duration of CTO PCI is approximately 2 hours (~20% of time for access to wire insertion, ~30% wire manipulation time, and ~50% postwiring time). Guidewire crossing time was shorter in less complex lesions and in cases without complications.

Cardiology/Cardiovascular Research

Saeed D, Feldman D, Banayosy AE, Birks E, Blume E, **Cowger J**, Hayward C, Jorde U, Kremer J, MacGowan G, Maltais S, Maybaum S, Mehra M, Mohacsi P, Schweiger M, Schroeder SE, Shah P, Slepian M, Tops LF, Alvarez P, Arabia F, Aslam S, Benson-Louis Lt, Birati E, Buchholz HW, Cedars A, Christensen D, Ciarka A, Coglianese E, Cogswell R, Cook J, Copeland J, Costello JG, Drakos SG, Eghtesady P, Elliot T, Estep JD, Eulert-Grehn JJ, Fabrizio R, Garbade J, Gelow J, Guglin M, Hernandez-Montfort J, Horstmanshof D, John R, Kanwar M, Khaliel F, Kim G, Kumar S, Lavee J, Leache M, Leprince P, Lim S, Loforte A, Maly J, Najjar S, Netuka I, Pamboukian SV, Patel SR, Pinney S, Pluym CV, Potapov E, Robson D, Rochlani Y, Russell S, Sandau K, Sandoval E, Sayer G, Schettle S, Schibilsky D, Schlöglhofer T, Schmitto J, Siddique A, Silvestry S, Slaughter MS, Sun B, Takayama H, Tedford R, Teuteberg JJ, Ton VK, Uriel N, Vierecke J, Zimpfer D, and D'Alessandro D. The 2023 International Society for Heart and Lung Transplantation Guidelines for Mechanical Circulatory Support: A 10- Year Update. *J Heart Lung Transplant* 2023; Epub ahead of print. PMID: 37245143. [Full Text](#)

Cardiology/Cardiovascular Research

Spargias K, Lim DS, Makkar R, Kar S, Kipperman RM, **O'Neill WW**, Ng MKC, Smith RL, Fam NP, Rinaldi MJ, Raffel CO, Walters DL, Levisay J, Montorfano M, Latib A, Carroll JD, Nickenig G, Windecker S, Marcoff L, Cohen GN, Schäfer U, Webb JG, and Szerlip M. Three-year outcomes for transcatheter repair in patients with mitral regurgitation from the CLASP study. *Catheter Cardiovasc Interv* 2023; Epub ahead of print. PMID: 37178388. [Full Text](#)

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BACKGROUND: Mitral valve transcatheter edge-to-edge repair (M-TEER) is an effective option for treatment of mitral regurgitation (MR). We previously reported favorable 2-year outcomes for the PASCAL transcatheter valve repair system. **OBJECTIVES:** We report 3-year outcomes from the multinational, prospective, single-arm CLASP study with analysis by functional MR (FMR) and degenerative MR (DMR). **METHODS:** Patients with core-lab determined MR $\geq 3+$ were deemed candidates for M-TEER by the local heart team. Major adverse events were assessed by an independent clinical events committee to 1 year and by sites thereafter. Echocardiographic outcomes were evaluated by the core laboratory to 3 years. **RESULTS:** The study enrolled 124 patients, 69% FMR; 31% DMR (60% NYHA class III-IVa, 100% MR $\geq 3+$). The 3-year Kaplan-Meier estimate for survival was 75% (66% FMR; 92% DMR) and freedom

from heart failure hospitalization (HFH) was 73% (64% FMR; 91% DMR), with 85% reduction in annualized HFH rate (81% FMR; 96% DMR) ($p < 0.001$). MR $\leq 2+$ was achieved and maintained in 93% of patients (93% FMR; 94% DMR) and MR $\leq 1+$ in 70% of patients (71% FMR; 67% DMR) ($p < 0.001$). The mean left ventricular end-diastolic volume (181 mL at baseline) decreased progressively by 28 mL [$p < 0.001$]. NYHA class I/II was achieved in 89% of patients ($p < 0.001$). CONCLUSIONS: The 3-year results from the CLASP study demonstrated favorable and durable outcomes with the PASCAL transcatheter valve repair system in patients with clinically significant MR. These results add to the growing body of evidence establishing the PASCAL system as a valuable therapy for patients with significant symptomatic MR.

Cardiology/Cardiovascular Research

Varghese MS, Song Y, Xu J, Dahabreh I, Beatty AL, Sperling LS, Fonarow GC, **Keteyian SJ**, Yeh RW, Wu WC, and Kazi DS. Availability and Use of In-Person and Virtual Cardiac Rehabilitation Among US Medicare Beneficiaries: A Post-Pandemic Update. *J Cardiopulm Rehabil Prev* 2023; Epub ahead of print. PMID: 37158994. [Full Text](#)

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Center for Health Policy and Health Services Research

Boyd AD, Gonzalez-Guarda R, Lawrence K, Patil CL, Ezenwa MO, O'Brien EC, Paek H, **Braciszewski JM**, Adeyemi O, Cuthel AM, Darby JE, Zigler CK, Ho PM, Faurot KR, Staman K, Leigh JW, Dailey DL, Chevillat A, Del Fiore G, Knisely MR, Marsolo K, Richesson RL, and Schlaeger JM. Equity and bias in electronic health records data. *Contemp Clin Trials* 2023;107238. Epub ahead of print. PMID: 37225122. [Full Text](#)

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Embedded pragmatic clinical trials (ePCTs) are conducted during routine clinical care and have the potential to increase knowledge about the effectiveness of interventions under real world conditions. However, many pragmatic trials rely on data from the electronic health record (EHR) data, which are subject to bias from incomplete data, poor data quality, lack of representation from people who are medically underserved, and implicit bias in EHR design. This commentary examines how the use of EHR data might exacerbate bias and potentially increase health inequities. We offer recommendations for how to increase generalizability of ePCT results and begin to mitigate bias to promote health equity.

Center for Health Policy and Health Services Research

Collado A, **Felton JW**, Bounoua N, Tormohlen K, and Yi R. A pilot trial of behavioural activation with a contingency management component: Preliminary examination of changes in smoking and alternative rewards among low-income individuals. *Int J Psychol* 2023; Epub ahead of print. PMID: 37202864. [Full Text](#)

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The heaviest smoking and burden of tobacco-related illness occurs among low-income individuals. Using a behavioural economics framework, this non-randomised pilot study examined the preliminary efficacy of behavioural activation (BA) with a contingency management (CM) component designed to encourage continued use of BA skills and reductions in cigarettes smoked. Eighty-four participants were recruited from a community centre. Data were collected at the start of every other group and at four different follow-up time points. Domains assessed included number of cigarettes smoked, activity level, and environmental rewards (i.e. alternative environmental reinforcers). Over time, cigarette smoking decreased ($p < .001$), environmental reward increased ($p = .03$), and reward probability and activity level were associated over time with cigarette smoking ($p \leq .03$) above and beyond the effect of nicotine dependence. The continued use of BA skills was associated with greater environmental rewards ($p = .04$). While further research is needed to replicate this work, results suggest initial evidence for the utility of this intervention in a traditionally underserved community.

Center for Health Policy and Health Services Research

Cronin RM, Feng X, Sulieman L, Mapes B, Garbett S, Able A, Hale R, Couper MP, Sansbury H, **Ahmedani BK**, and Chen Q. Importance of missingness in baseline variables: A case study of the All of Us Research Program. *PLoS One* 2023; 18(5):e0285848. PMID: 37200348. [Full Text](#)

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OBJECTIVE: The All of Us Research Program collects data from multiple information sources, including health surveys, to build a national longitudinal research repository that researchers can use to advance precision medicine. Missing survey responses pose challenges to study conclusions. We describe missingness in All of Us baseline surveys. **STUDY DESIGN AND SETTING:** We extracted survey responses between May 31, 2017, to September 30, 2020. Missing percentages for groups historically underrepresented in biomedical research were compared to represented groups. Associations of missing percentages with age, health literacy score, and survey completion date were evaluated. We used negative binomial regression to evaluate participant characteristics on the number of missed questions out of the total eligible questions for each participant. **RESULTS:** The dataset analyzed contained data for 334,183 participants who submitted at least one baseline survey. Almost all (97.0%) of the participants completed all baseline surveys, and only 541 (0.2%) participants skipped all questions in at least one of the baseline surveys. The median skip rate was 5.0% of the questions, with an interquartile range (IQR) of 2.5% to 7.9%. Historically underrepresented groups were associated with higher missingness (incidence rate ratio (IRR) [95% CI]: 1.26 [1.25, 1.27] for Black/African American compared to White). Missing percentages were similar by survey completion date, participant age, and health literacy score. Skipping specific questions were associated with higher missingness (IRRs [95% CI]: 1.39 [1.38, 1.40] for skipping income, 1.92 [1.89, 1.95] for skipping education, 2.19 [2.09-2.30] for skipping sexual and gender questions). **CONCLUSION:** Surveys in the All of Us Research Program will form an essential component of the data researchers can use to perform their analyses. Missingness was low in All of Us baseline surveys, but group differences exist. Additional statistical methods and careful analysis of surveys could help mitigate challenges to the validity of conclusions.

Center for Health Policy and Health Services Research

Debbs J, Hannawi B, Peterson E, Gui H, Zeld N, Luzum JA, Sabbah HN, Snider J, Pinto YM, Williams LK, and Lanfear DE. Evaluation of a New Aptamer-Based Array for Soluble Suppressor of Tumorigenicity (ST2) and N-terminal Pro-B-Type Natriuretic Peptide (NTproBNP) in Heart Failure Patients. *J Cardiovasc Transl Res* 2023; Epub ahead of print. PMID: 37191882. [Full Text](#)

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BACKGROUND: Recent advances in multi-marker platforms offer faster data generation, but the fidelity of these methods compared to the ELISA is not established. We tested the correlation and predictive performance of SOMAscan vs. ELISA methods for NTproBNP and ST2. **METHODS:** Patients ≥ 18 years with heart failure and ejection fraction $< 50\%$ were enrolled. We tested the correlation between SOMA and ELISA for each biomarker and their association with outcomes. **RESULTS:** There was good correlation of SOMA vs. ELISA for ST2 ($\rho = 0.71$) and excellent correlation for NTproBNP ($\rho = 0.94$). The two versions of both markers were not significantly different regarding survival association. The two ST2 assays and NTproBNP assays were similarly associated with all-cause mortality and cardiovascular mortality. These associations remained statistically significant when adjusted for MAGGIC risk score (all $p < 0.05$). **CONCLUSION:** SOMAscan quantifications of ST2 and NTproBNP correlate to ELISA versions and carry similar prognosis.

Center for Health Policy and Health Services Research

Miller-Matero LR, Ross K, DePascale E, Arellano C, Zelenak L, Braciszewski JM, Hecht LM, Haley EN, Loree AM, and Carlin AM. Post-surgical cannabis use is associated with weight loss among individuals up to 4 years after bariatric surgery. *Surg Endosc* 2023; Epub ahead of print. PMID: 37202524. [Full Text](#)

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INTRODUCTION: Although cannabis is known to stimulate appetite, it is not clear whether cannabis use may impact weight loss outcomes following bariatric surgery. Although some work has suggested that pre-surgical cannabis use is not associated with post-surgical weight loss, the role of post-surgical cannabis use has not yet been examined. The purpose of this study was to measure pre- and post-surgical cannabis use and determine whether cannabis use was associated with weight loss outcomes following bariatric surgery. **METHODS:** Patients who underwent bariatric surgery over a 4-year period at a single health care system were invited to complete a survey regarding pre- and post-surgical cannabis use and report their current weight. Pre-surgical weight and BMI were extracted from medical records to calculate change in BMI (Δ BMI), percent total weight loss (%TWL), percent excess weight loss (%EWL), whether participants experienced a successful weight loss outcome, and whether participants had weight recurrence. **RESULTS:** Among all participants (N = 759), 10.7% and 14.5% engaged in pre- and post-surgical cannabis use, respectively. Pre-surgical cannabis use was not associated with any weight loss outcomes ($p > 0.05$). Any post-surgical cannabis use was associated with lower %EWL ($p = 0.04$) and greater likelihood of weight recurrence ($p = 0.04$). Weekly cannabis use was associated with lower %EWL ($p = 0.003$), lower %TWL ($p = 0.04$), and a lower likelihood of having a successful weight loss outcome ($p = 0.02$). **CONCLUSIONS:** Although pre-surgical cannabis use may not predict weight loss outcomes, post-surgical cannabis was associated with poorer weight loss outcomes. Frequent use (i.e., weekly) may be especially problematic. Providers should consider screening patients for cannabis use and educate them about the potential impact of postoperative cannabis use on weight loss following bariatric surgery.

Center for Health Policy and Health Services Research

Nau CL, **Braciszewski JM**, Rossom RC, Penfold RB, Coleman KJ, Simon GE, Hong B, Padilla A, Butler RK, Chen A, and Waters HC. Assessment of Disruptive Life Events for Individuals Diagnosed With Schizophrenia or Bipolar I Disorder Using Data From a Consumer Credit Reporting Agency. *JAMA Psychiatry* 2023; Epub ahead of print. PMID: 37163288. [Full Text](#)

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IMPORTANCE: There is a dearth of population-level data on major disruptive life events (defined here as arrests by a legal authority, address changes, bankruptcy, lien, and judgment filings) for patients with bipolar I disorder (BPI) or schizophrenia, which has limited studies on mental health and treatment outcomes. **OBJECTIVE:** To conduct a population-level study on disruptive life events by using publicly available data on disruptive life events, aggregated by a consumer credit reporting agency in conjunction with electronic health record (EHR) data. **DESIGN, SETTING, AND PARTICIPANTS:** This study used EHR data from 2 large, integrated health care systems, Kaiser Permanente Southern California and

Henry Ford Health. Cohorts of patients diagnosed from 2007 to 2019 with BPI or schizophrenia were matched 1:1 by age at analysis, age at diagnosis (if applicable), sex, race and ethnicity, and Medicaid status to (1) an active comparison group with diagnoses of major depressive disorder (MDD) and (2) a general health (GH) cohort without diagnoses of BPI, schizophrenia, or MDD. Patients with diagnoses of BPI or schizophrenia and their respective comparison cohorts were matched to public records data aggregated by a consumer credit reporting agency (98% match rate). Analysis took place between November 2020 and December 2022. MAIN OUTCOMES AND MEASURES: The differences in the occurrence of disruptive life events among patients with BPI or schizophrenia and their comparison groups. RESULTS: Of 46 167 patients, 30 008 (65%) had BPI (mean [SD] age, 42.6 [14.2] years) and 16 159 (35%) had schizophrenia (mean [SD], 41.4 [15.1] years). The majority of patients were White (30 167 [65%]). In addition, 18 500 patients with BPI (62%) and 6552 patients with schizophrenia (41%) were female. Patients with BPI were more likely to change addresses than patients in either comparison cohort (with the incidence ratio being as high as 1.25 [95% CI, 1.23-1.28]) when compared with GH cohort. Patients with BPI were also more likely to experience any of the financial disruptive life events with odds ratio ranging from 1.15 [95% CI, 1.07-1.24] to 1.50 [95% CI, 1.42-1.58]). The largest differences in disruptive life events were seen in arrests of patients with either BPI or schizophrenia compared with GH peers (3.27 [95% CI, 2.84-3.78] and 3.04 [95% CI, 2.57-3.59], respectively). Patients with schizophrenia had fewer address changes and were less likely to experience a financial event than their matched comparison cohorts. CONCLUSIONS AND RELEVANCE: This study demonstrated that data aggregated by a consumer credit reporting agency can support population-level studies on disruptive life events among patients with BPI or schizophrenia.

Center for Health Policy and Health Services Research

Polfuss M, Mooney-Doyle K, Keller M, Gralton KS, Giambra B, and **Vance A**. Developing a Family Resource: Considerations for Family Member Research Participation. *J Fam Nurs* 2023. PMID: Not assigned. [Full Text](#)

Center for Health Policy and Health Services Research

Sala-Hamrick KJ, Braciszewski JM, Yeh HH, Zelenak L, Westphal J, Beebani G, Frank C, Simon GE, Owen-Smith AA, Rossom RC, Lynch F, Lu CY, Waring SC, Harry ML, Beck A, Daida YG, and **Ahmedani BK**. Diagnosed Posttraumatic Stress Disorder and Other Trauma-Associated Stress Disorders and Risk for Suicide Mortality. *Psychiatr Serv* 2023; Epub ahead of print. PMID: 37143334. [Request Article](#)

Center for Health Policy and Health Services Research (Sala-Hamrick, Braciszewski, Yeh, Zelenak, Westphal, Ahmedani) and Department of Psychiatry (Braciszewski, Beebani, Frank, Ahmedani), Henry Ford Health System, Detroit; Kaiser Permanente Washington, Seattle (Simon); Department of Health Policy and Behavioral Sciences, School of Public Health, Georgia State University, and Center for Clinical and Outcomes Research, Kaiser Permanente Georgia, Atlanta (Owen-Smith); HealthPartners Institute, Bloomington, Minnesota (Rossom); Center for Health Research, Kaiser Permanente Northwest, Portland, Oregon (Lynch); Department of Population Medicine, Harvard Medical School, and Harvard Pilgrim Health Care Institute, Boston (Lu); Essentia Institute of Rural Health, Essentia Health, Duluth, Minnesota (Waring, Harry); Institute for Health Research, Kaiser Permanente Colorado, Denver (Beck); Kaiser Permanente Hawaii, Honolulu (Daida).

OBJECTIVE: Strong evidence exists for posttraumatic stress disorder (PTSD) as a risk factor for suicidal thoughts and behaviors across diverse populations. However, few empirical studies have examined PTSD and other trauma-associated stress disorders as risk factors for suicide mortality among health system populations. This study aimed to assess trauma-associated stress diagnoses as risk factors for suicide mortality in a U.S. health system population. METHODS: This case-control, matched-design study examined individuals who died by suicide between 2000 and 2015 and had received care from nine U.S. health systems affiliated with the Mental Health Research Network (N=3,330). Individuals who died by suicide were matched with individuals from the general health system population (N=333,000): 120 individuals with PTSD who died by suicide were matched with 1,592 control group members, 84 with acute reaction to stress were matched with 2,218 control individuals, and 331 with other stress reactions were matched with 8,174 control individuals. RESULTS: After analyses were adjusted for age and sex, individuals with any trauma-associated stress condition were more likely to have died by suicide. Risk

was highest among individuals with PTSD (adjusted OR [AOR]=10.10, 95% CI=8.31-12.27), followed by those with other stress reactions (AOR=5.38, 95% CI=4.78-6.06) and those with acute reaction to stress (AOR=4.49, 95% CI=3.58-5.62). Patterns of risk remained the same when the analyses were adjusted for any comorbid psychiatric condition. CONCLUSIONS: All trauma-associated stress disorders are risk factors for suicide mortality, highlighting the importance of health system suicide prevention protocols that consider the full spectrum of traumatic stress diagnoses.

Center for Individualized and Genomic Medicine Research

Debbs J, Hannawi B, Peterson E, Gui H, Zeld N, Luzum JA, Sabbah HN, Snider J, Pinto YM, Williams LK, and Lanfear DE. Evaluation of a New Aptamer-Based Array for Soluble Suppressor of Tumorigenicity (ST2) and N-terminal Pro-B-Type Natriuretic Peptide (NTproBNP) in Heart Failure Patients. *J Cardiovasc Transl Res* 2023; Epub ahead of print. PMID: 37191882. [Full Text](#)

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BACKGROUND: Recent advances in multi-marker platforms offer faster data generation, but the fidelity of these methods compared to the ELISA is not established. We tested the correlation and predictive performance of SOMAscan vs. ELISA methods for NTproBNP and ST2. METHODS: Patients ≥ 18 years with heart failure and ejection fraction $< 50\%$ were enrolled. We tested the correlation between SOMA and ELISA for each biomarker and their association with outcomes. RESULTS: There was good correlation of SOMA vs. ELISA for ST2 ($\rho = 0.71$) and excellent correlation for NTproBNP ($\rho = 0.94$). The two versions of both markers were not significantly different regarding survival association. The two ST2 assays and NTproBNP assays were similarly associated with all-cause mortality and cardiovascular mortality. These associations remained statistically significant when adjusted for MAGGIC risk score (all $p < 0.05$). CONCLUSION: SOMAscan quantifications of ST2 and NTproBNP correlate to ELISA versions and carry similar prognosis.

Center for Individualized and Genomic Medicine Research

Kachuri L, Mak ACY, Hu D, Eng C, Huntsman S, Elhawary JR, Gupta N, Gabriel S, **Xiao S**, Keys KL, Oni-Orisan A, Rodríguez-Santana JR, LeNoir MA, Borrell LN, Zaitlen NA, **Williams LK**, Gignoux CR, Burchard EG, and Ziv E. Gene expression in African Americans, Puerto Ricans and Mexican Americans reveals ancestry-specific patterns of genetic architecture. *Nat Genet* 2023; Epub ahead of print. PMID: 37231098. [Full Text](#)

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We explored ancestry-related differences in the genetic architecture of whole-blood gene expression using whole-genome and RNA sequencing data from 2,733 African Americans, Puerto Ricans and Mexican Americans. We found that heritability of gene expression significantly increased with greater proportions of African genetic ancestry and decreased with higher proportions of Indigenous American ancestry, reflecting the relationship between heterozygosity and genetic variance. Among heritable protein-coding genes, the prevalence of ancestry-specific expression quantitative trait loci (anc-eQTLs) was 30% in African ancestry and 8% for Indigenous American ancestry segments. Most anc-eQTLs (89%) were driven by population differences in allele frequency. Transcriptome-wide association analyses of multi-ancestry summary statistics for 28 traits identified 79% more gene-trait associations using transcriptome prediction models trained in our admixed population than models trained using data from the Genotype-Tissue Expression project. Our study highlights the importance of measuring gene expression across large and ancestrally diverse populations for enabling new discoveries and reducing disparities.

Dermatology

Bagel J, **Gold LS**, Del Rosso J, Johnson S, Yamauchi P, Brown PM, Bhatia N, Moore AY, and Tallman AM. Tapinarof cream 1% once daily for the treatment of plaque psoriasis: Patient-reported outcomes from the PSOARING 3 trial. *J Am Acad Dermatol* 2023; Epub ahead of print. PMID: 37172733. [Full Text](#)

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BACKGROUND: Tapinarof cream 1% once daily demonstrated significant efficacy versus vehicle and was well tolerated in two 12-week, phase 3 pivotal trials in adults with mild to severe plaque psoriasis. **OBJECTIVE:** Assess long-term, health-related quality of life (HRQoL) and patient satisfaction with tapinarof. **METHODS:** Patients completing the 12-week trials were eligible for 40 weeks of open-label tapinarof based on Physician Global Assessment score in PSOARING 3, with a 4-week follow-up. Dermatology Life Quality Index (DLQI) was assessed at every visit; Patient Satisfaction Questionnaire© (PSQ) responses were assessed at Week 40 or early termination. **RESULTS:** 763 (91.6%) eligible

patients enrolled; 78.5% completed the PSQ. DLQI scores improved and were maintained. By Week 40, 68.0% of patients had a DLQI of 0 or 1, indicating no impact of psoriasis on HRQoL. Most patients strongly agreed or agreed with all PSQ questions assessing confidence in tapinarof and satisfaction with efficacy (62.9-85.8%), application ease and cosmetic elegance (79.9-96.3%), and preference for tapinarof versus prior psoriasis therapies (55.3-81.7%). LIMITATIONS: Open-label; no control; may not be generalizable to all forms of psoriasis. CONCLUSIONS: Continued and durable improvements in HRQoL, high rates of patient satisfaction, and positive perceptions of tapinarof cream were demonstrated.

Dermatology

Ceresnie MS, Gonzalez S, and Hamzavi IH. Diagnosing Disorders of Hypopigmentation and Depigmentation in Patients with Skin of Color. *Dermatol Clin* 2023; 41(3):407-416. PMID: 37236710. [Full Text](#)

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Skin hypopigmentation and depigmentation disorders are a top concern for patients with skin of color seeking care from a dermatologist. The visual contrast between involved and uninvolved skin in these disorders makes them particularly burdensome for patients with skin of color. These disorders may have a wide differential of diagnosis, as patients with skin of color may present differently or more frequently than White patients for certain conditions. Clues from a comprehensive history and physical examination with standard lighting and a Wood's light are essential for clinching the diagnosis, although a biopsy may be warranted in special cases.

Dermatology

Dimitrion P, Hamzavi I, Yin C, Toor J, Subedi K, Khalasawi N, Miller A, Huggins R, Adrianto I, Veenstra J, Vellaichamy G, Hans A, Daveluy S, Athar M, Liao W, Lim H, Ozog D, Zhou L, and Mi QS. Mass cytometry uncovers a distinct peripheral immune profile and upregulated CD38 expression in patients with hidradenitis suppurativa. *Cell Mol Immunol* 2023; Epub ahead of print. PMID: 37248290.

[Request Article](#)

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Dermatology

Maghfour J, Bardhi R, Huggins R, Hamzavi IH, and Mohammad TF. Recipient-to-Donor Ratios in the Surgical Treatment of Vitiligo, Leukoderma, and Piebaldism: A Retrospective Review. *Dermatology* 2023; 1. Epub ahead of print. PMID: 37231873. [Request Article](#)

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BACKGROUND: The autologous noncultured melanocyte keratinocyte transplant procedure (MKTP) has emerged as a popular grafting technique with proven efficacy for achieving repigmentation. However, there remains no consensus regarding the optimal recipient-to-donor (RD) ratio required to achieve acceptable repigmentation. In this retrospective cohort study of 120 patients, we sought to examine whether expansion ratios impact the repigmentation success rates following MKTP. **RESULTS:** A total of 69 patients (mean [SD] age was 32.4 [14.3] years, mean follow-up was 30.4 [22.5] months, 63.8% were male; 55% were dark-skinned individuals [Fitzpatrick IV-VI]) were included. The mean percent change in the Vitiligo Area Scoring Index (VASI) was 80.2 (± 23.7 ; RD of 7.3) in patients with focal/segmental vitiligo (SV), 58.3 (± 33.0 ; RD of 8.2) in those with non-segmental vitiligo (NSV), and 51.8 (± 33.6 ; RD of 3.7) in those with leukoderma and piebaldism. Focal/SV was positively associated with a higher percent change in VASI (parameter estimate: 22.6, p value < 0.005). In the SV/focal group, non-white patients had a higher RD ratio compared to White individuals (8.2 ± 3.4 vs. 6.0 ± 3.1 , respectively, p value = 0.035). **DISCUSSION:** In our study, we found that patients with SV were significantly more likely to achieve higher repigmentation rates compared to those with NSV. Although repigmentation rates were higher in the low expansion ratio group than in the high expansion ratio group, we did not observe a significant difference between the two groups. **CONCLUSION:** MKTP is an effective therapy for restoring repigmentation in patients with stable vitiligo. Therapeutic response of vitiligo to MKTP appears to be influenced by the type of vitiligo, rather than a specific RD ratio.

Dermatology

Maghfour J, Liu V, Parks-Miller A, and Hamzavi IH. Evaluating the Impact of Exclusion Criteria on the Generalizability of Hidradenitis Suppurativa Treatment Research. *JID Innov* 2023; 3(3):100192. PMID: 37252321. [Full Text](#)

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Exclusion criteria can limit the generalizability and translation of research findings into clinical practice. The objective of this study is to characterize the trends of exclusion criteria and explore the impact of exclusion criteria on participant diversity, length of enrollment, and the number of enrolled participants. A detailed search was performed using PubMed and clinicaltrials.gov. Nineteen published randomized controlled trials were included, where 2,664 patients were screened, and 2,234 patients (mean age: 37.6 years, 56.6% female) were enrolled from 25 countries. On average, there were 10.1 (standard deviation: 6.14, range: 3-25) exclusion criteria per randomized controlled trial. There was a weak to moderate positive correlation between the number of exclusion criteria and the proportion of enrolled participants ($R = 0.49$, P value = 0.040). However, no association was seen between the number of exclusion criteria, number of enrolled Black participants ($R = 0.86$, p value = 0.08), and enrollment length ($R = 0.083$, P value = 0.74). In addition, there was no discernable trend in the number of exclusion criteria over time ($R = -0.18$, P value = 0.48). Although the number of exclusion criteria appeared to impact the number of enrolled participants, the lack of skin of color representation in hidradenitis suppurativa randomized controlled trials does not appear to be influenced by the number of exclusion criteria.

Dermatology

Shetty NP, Taylor SC, and **Lim HW**. Personalized Photoprotection: Commentary on "Adjusting Best Practices in the Treatment of Melasma with a Focus on Patients with Skin of Color". *J Am Acad Dermatol* 2023; Epub ahead of print. PMID: 37230365. [Full Text](#)

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Dermatology

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BACKGROUND: Lebrikizumab is a monoclonal antibody that binds with high affinity to interleukin (IL)-13, thereby blocking the downstream effects of IL-13 with high potency. **OBJECTIVES:** To report integrated safety of lebrikizumab in adults and adolescents with moderate-to-severe atopic dermatitis from phase 2 and 3 studies. **METHODS:** Five double-blind, randomized placebo-controlled studies; one randomized open-label study; one adolescent open-label, single-arm study; and one long-term safety study were summarized in two datasets: (1) placebo-controlled week 0-16 (All-PC Week 0-16) in patients who received lebrikizumab 250 mg every 2 weeks (LEBQ2W) versus placebo and (2) patients who received any dose of lebrikizumab at any time during the studies (All-LEB). Exposure-adjusted incidence rates (IR)/100 patient-years (PY) are provided. **RESULTS:** A total of 1720 patients received lebrikizumab (1637.0 PY exposure). In All-PC Week 0-16, the frequency of treatment-emergent adverse events (TEAEs) was similar between treatment groups; most events were nonserious and mild or moderate in severity. The most frequently reported TEAEs were atopic dermatitis (placebo) and conjunctivitis (LEBQ2W). Frequencies of conjunctivitis cluster were 2.5% (placebo) and 8.5% (LEBQ2W), and all events were mild or moderate (All-LEB 10.6%, IR, 12.2). Frequencies of injection site reactions were 1.5% (placebo) and 2.6% (LEBQ2W; All-LEB 3.1%, IR, 3.3). Frequencies of adverse events leading to treatment discontinuation were 1.4% (placebo) and 2.3% (LEBQ2W; All-LEB 4.2%, IR, 4.5). **CONCLUSION:** The safety profile for lebrikizumab consisted of TEAEs that were mostly nonserious, mild or moderate in severity, and did not lead to treatment discontinuation. The safety profile was similar in both adults and adolescents. **CLINICALTRIALS:** GOV: NCT02465606, NCT02340234, NCT03443024, NCT04146363, NCT04178967, NCT04250337, NCT04250350, NCT04392154 Safety of lebrikizumab in adults and adolescents with moderate-to-severe atopic dermatitis: an integrated analysis of eight clinical trials (MP4 34165 KB). Atopic dermatitis (AD) is a common chronic (persistent) skin disease that occurs in up to 7% of adults and approximately 20% of children. Lebrikizumab is a monoclonal antibody that goes against interleukin-13, which is overexpressed in patients with AD. Lebrikizumab is given by injection and is being studied to treat AD. It has been tested in several studies in both adults and adolescents (patients age ≥ 12 – < 18 years). In some of those studies, patients used lebrikizumab by itself, and in other studies patients used lebrikizumab in combination with low-to-moderate strength topical (rubbed on the skin)

corticosteroid medicines. We examined the safety of lebrikizumab by combining the data from eight of those studies and analyzing the data in two datasets. The first dataset compared the safety of lebrikizumab 250 mg injected every 2 weeks with placebo (no drug in the injection) in four 16-week studies in which neither patient nor physician knew whether lebrikizumab or placebo was being injected. The second dataset included four additional studies and examined the safety of lebrikizumab in all patients receiving at least 1 injection of lebrikizumab at any dose. A total of 1720 patients took lebrikizumab. In the first dataset the frequency of adverse events was similar between lebrikizumab and placebo, and most events that did occur were mild or moderate in severity and were not serious. The most common adverse event in patients treated with placebo was atopic dermatitis, and in patients treated with lebrikizumab it was conjunctivitis. Frequencies of adverse events in the conjunctivitis cluster, which included a search for the terms of conjunctivitis, allergic conjunctivitis, bacterial conjunctivitis, viral conjunctivitis, and giant papillary conjunctivitis, were 2.5% in placebo and 8.5% in lebrikizumab, and all events were mild or moderate. Frequencies of injection site reactions were 1.5% in placebo and 2.6% in lebrikizumab, and frequencies of adverse events that led to patients stopping treatment were 1.4% in placebo and 2.3% in lebrikizumab. In the second dataset, the rate of these adverse events did not increase with longer duration of lebrikizumab. The safety profile for lebrikizumab consisted of adverse events that were mostly nonserious, mild or moderate in severity, and did not lead to stopping treatment. The safety profile was similar in both adults and adolescents.

Dermatology

Young KZ, Dimitrion P, Zhou L, Adrianto I, and Mi QS. Sex-biased immunological processes drive hidradenitis suppurativa. *Front Immunol* 2023; 14:1167021. PMID: 37215102. [Full Text](#)

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Hidradenitis suppurativa (HS) is a chronic inflammatory skin condition that can manifest with abscesses, sinus tracts, and scarring in the intertriginous areas of the body. HS is characterized by immune dysregulation, featuring elevated levels of myeloid cells, T helper (Th) cells, and pro-inflammatory cytokines, particularly those involved in Th1- and Th17-mediated immunity. In most epidemiological studies, HS shows a strong female sex bias, with reported female-to-male ratios estimated at roughly 3:1, suggesting that sex-related factors contribute to HS pathophysiology. In this article, we review the role of intrinsic and extrinsic factors that contribute to immunological differences between the sexes and postulate their role in the female sex bias observed in HS. We discuss the effects of hormones, X chromosome dosage, genetics, the microbiome, and smoking on sex-related differences in immunity to postulate potential immunological mechanisms in HS pathophysiology. Future studies are required to better characterize sex-biased factors that contribute to HS disease presentations.

Dermatology

Zirwas MJ, Draelos ZD, DuBois J, Kircik LH, Moore AY, **Stein Gold L**, Alonso-Llamazares J, Bukhalo M, Bruce S, Eads K, Green LJ, Guenther ST, Ferris LK, Forman SB, Kempers SE, Lain E, Lynde CW, Pariser DM, Toth DP, Yamauchi PS, Higham RC, Krupa D, Burnett P, and Berk DR. Efficacy of Roflumilast Foam, 0.3%, in Patients With Seborrheic Dermatitis: A Double-blind, Vehicle-Controlled Phase 2a Randomized Clinical Trial. *JAMA Dermatol* 2023; Epub ahead of print. PMID: 37133856. [Full Text](#)

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Probit Medical Research, Markham, Ontario, Canada.
Eastern Virginia Medical School, Norfolk.
Virginia Clinical Research, Inc, Norfolk.
XLR8 Medical Research, Windsor, Ontario, Canada.
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IMPORTANCE: Current topical treatment options for seborrheic dermatitis are limited by efficacy and/or safety. **OBJECTIVE:** To assess safety and efficacy of roflumilast foam, 0.3%, in adult patients with seborrheic dermatitis affecting the scalp, face, and/or trunk. **DESIGN, SETTING, AND PARTICIPANTS:** This multicenter (24 sites in the US and Canada) phase 2a, parallel group, double-blind, vehicle-controlled clinical trial was conducted between November 12, 2019, and August 21, 2020. Participants were adult (aged ≥ 18 years) patients with a clinical diagnosis of seborrheic dermatitis for a 3-month or longer duration and Investigator Global Assessment (IGA) score of 3 or greater (at least moderate), affecting 20% or less body surface area, including scalp, face, trunk, and/or intertriginous areas. Data analysis was performed from September to October 2020. **INTERVENTIONS:** Once-daily roflumilast foam, 0.3% (n = 154), or vehicle foam (n = 72) for 8 weeks. **MAIN OUTCOMES AND MEASURES:** The main outcome was IGA success, defined as achievement of IGA score of clear or almost clear plus 2-grade improvement from baseline, at week 8. Secondary outcomes included IGA success at weeks 2 and 4; achievement of erythema score of 0 or 1 plus 2-grade improvement from baseline at weeks 2, 4, and 8; achievement of scaling score of 0 or 1 plus 2-grade improvement from baseline at weeks 2, 4, and 8; change in Worst Itch Numeric Rating Scale (WI-NRS) score from baseline; and WI-NRS success, defined as achievement of 4-point or greater WI-NRS score improvement in patients with baseline WI-NRS score of 4 or greater. Safety and tolerability were also assessed. **RESULTS:** A total of 226 patients (mean [SD] age, 44.9 [16.8] years; 116 men, 110 women) were randomized to roflumilast foam (n = 154) or vehicle foam (n = 72). At week 8, 104 (73.8%) roflumilast-treated patients achieved IGA success compared with 27 (40.9%) in the vehicle group ($P < .001$). Roflumilast-treated patients had statistically significantly higher rates of IGA success vs vehicle at week 2, the first time point assessed. Mean (SD) reductions (improvements) on the WI-NRS at week 8 were 59.3% (52.5%) vs 36.6% (42.2%) in the roflumilast and vehicle groups, respectively ($P < .001$). Roflumilast was well tolerated, with the rate of adverse events similar to that of the vehicle foam. **CONCLUSIONS AND RELEVANCE:** The results from this phase 2a

randomized clinical trial of once-daily roflumilast foam, 0.3%, demonstrated favorable efficacy, safety, and local tolerability in the treatment of erythema, scaling, and itch caused by seborrheic dermatitis, supporting further investigation as a nonsteroidal topical treatment. TRIAL REGISTRATION: ClinicalTrials.gov Identifier: NCT04091646.

Diagnostic Radiology

Bartlett S, Nagaraja TN, Griffith B, Farmer KG, Van Harn M, Haider S, Hunt RJ, Cabral G, Knight RA, Valadie OG, Brown SL, Ewing JR, and Lee IY. Persistent Peri-Ablation Blood-Brain Barrier Opening After Laser Interstitial Thermal Therapy for Brain Tumors. *Cureus* 2023; 15(4):e37397. PMID: 37182017. [Full Text](#)

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Purpose Laser interstitial thermal therapy (LITT) is a minimally invasive, image-guided, cytoreductive procedure to treat recurrent glioblastoma. This study implemented dynamic contrast-enhanced magnetic resonance imaging (DCE-MRI) methods and employed a model selection paradigm to localize and quantify post-LITT blood-brain barrier (BBB) permeability in the ablation vicinity. Serum levels of neuron-specific enolase (NSE), a peripheral marker of increased BBB permeability, were measured. Methods Seventeen patients were enrolled in the study. Using an enzyme-linked immunosorbent assay, serum NSE was measured preoperatively, 24 hours postoperatively, and at two, eight, 12, and 16 weeks postoperatively, depending on postoperative adjuvant treatment. Of the 17 patients, four had longitudinal DCE-MRI data available, from which blood-to-brain forward volumetric transfer constant (K(trans)) data were assessed. Imaging was performed preoperatively, 24 hours postoperatively, and between two and eight weeks postoperatively. Results Serum NSE increased at 24 hours following ablation ($p=0.04$), peaked at two weeks, and returned to baseline by eight weeks postoperatively. K(trans) was found to be elevated in the peri-ablation periphery 24 hours after the procedure. This increase persisted for two weeks. Conclusion Following the LITT procedure, serum NSE levels and peri-ablation K(trans) estimated from DCE-MRI demonstrated increases during the first two weeks after ablation, suggesting transiently increased BBB permeability.

Diagnostic Radiology

Chiu MK, Hadied MO, Klochko C, and van Holsbeeck MT. Comparison of patient characteristics and treatment approaches for femoral and inguinal hernias utilizing dynamic ultrasound at a single institution. *Hernia* 2023; Epub ahead of print. PMID: 37253821. [Full Text](#)

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PURPOSE: To assess the differences in management approach to femoral versus inguinal hernias and to identify patient characteristics associated with each hernia type. **METHODS:** Imaging studies for patients who had undergone dynamic ultrasound evaluation for the symptom of groin pain between January 1, 2010, and March 31, 2019, at a single institution Musculoskeletal Department were analyzed. Positive femoral hernia imaging studies were compared to studies for inguinal hernias and matching medical records for imaging studies were analyzed. Association of patient characteristics (age, sex, smoking, diabetes) with hernia type was assessed. Primary outcomes were surgical versus non-surgical approach, type of surgery, number of follow-up visits, and pain resolution. **RESULTS:** A total of 1319 patients presented with groin pain and were assessed with dynamic ultrasound (534 female; 785 male; mean [\pm SD] age 48.2 ± 16.5). While 409 (31.0%) patients had a femoral hernia detected, 666 (50.6%) had an

inguinal hernia detected ($p < .05$). Significantly more inguinal hernias were surgically repaired than femoral hernias (65.0% vs 53.9% $p = .008$), and more inguinal hernias than femoral hernias were treated with open surgery (71.0% vs 57.7%; $p = .014$). Patients with femoral hernias had significantly more follow-up clinic visits than patients with inguinal hernias (mean $[\pm SD]$ 2.65 ± 4.80 vs 1.76 ± 1.27 ; $p = .010$). No difference in the percentage of patients who had pain resolution was observed (82.2% inguinal vs 75.0% femoral; $p = .13$). **CONCLUSIONS:** Femoral hernias were managed more conservatively than inguinal hernias at our institution.

Diagnostic Radiology

Moradiya KR, **Patel PY**, and **Dalal I**. 18F-FDG PET and MRI Evaluation of Paraneoplastic Limbic Encephalitis. *Clin Nucl Med* 2023; Epub ahead of print. PMID: 37167219. [Full Text](#)

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Autoimmune limbic encephalitis (paraneoplastic or nonparaneoplastic) is a rare condition involving autoantibodies against intracellular or cell-surface proteins of neurons. Patients typically present with acute and progressive neuropsychiatric symptoms. Although the criterion standard for diagnosis remains detection of autoantibodies in cerebrospinal fluid, there are characteristic imaging features that can aid in diagnosis, notably abnormalities in the bilateral medial temporal lobes on imaging, particularly with nuclear imaging. Here, we present 18F-FDG PET findings of paraneoplastic limbic encephalitis in a 65-year-old man.

Diagnostic Radiology

Obri MS, **Kamran W**, **Almajed MR**, Eid D, and **Venkat D**. Splenic Artery Embolism in Liver Transplant Patients: A Single-Center Experience. *Cureus* 2023; 15(5):e38599. PMID: 37168407. [Full Text](#)

Internal Medicine, Henry Ford Health System, Detroit, USA.
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BACKGROUND: Hypersplenism, portal hypertension, and ascites have been seen after liver transplants. Patients are usually treated medically with refractory patients potentially undergoing splenectomy. Splenic artery embolism (SAE) is an alternative that can be performed to limit the surgical intervention that may have the benefit of improving portal hypertension. Few studies have studied the effect on main portal vein (MPV) velocities and hepatic artery resistive indices (HARIs) which may be beneficial as markers of portal hypertension. **PURPOSE:** This study aims to evaluate the efficacy and safety of interventional radiology (IR)-guided SAE for the management of portal hypertension in patients who have had liver transplants. **METHODS:** A retrospective analysis was conducted on liver transplant patients who had undergone IR-guided SAE post-transplant at a single tertiary transplant center from 2012 to 2022. The primary outcome of intervention efficacy was quantified by peak HARIs and MPV velocities. Ultrasound with Doppler obtained before and after the intervention was reviewed for these parameters. Secondary outcomes included adverse events at the time of the procedure and within one year of the procedure, the need for splenectomy, and spleen size. **RESULTS:** Twenty-eight patients met the criteria for inclusion. The mean age of patients was 52.5 years (21-71 years) and the time after transplant was 149.5 days (2-1588 days). About 96.4% of SAEs were technically successful ($n=27$). Twenty-one patients had MPV velocities available, and 24 had peak HARIs available. In these patients, HARIs decreased by an average of 0.063 (95% CI 0.014-0.112) after SAE. MPV velocity decreased by an average of 47.2 cm/s (95% CI 27.3-67.1) after SAE. About 10.4% of patients ($n=3$) developed a procedure-related complication, all of which were femoral access site aneurysms. No (0) patients suffered from bleeding, infections, or abscesses after the procedure. About 10.7% of patients ($n=3$) required splenectomy after SAE: one splenectomy was due to technical failure and two were due to refractory symptoms. **CONCLUSION:** We performed one of the first analyses on MPV and RI and showed that our patients saw an improvement post-embolization with a

theoretical improvement in portal hypertension. The complication rate and risk of infection seem to be acceptable risks, making SAE a feasible option for management.

Emergency Medicine

Long TK, Booza SD, and Turner LN. Identification of Seniors at Risk Score to Determine Geriatric Evaluations on Trauma Patients With Hip Fractures. *J Trauma Nurs* 2023; 30(3):142-149. PMID: 37144802. [Full Text](#)

Senior Health Services (Dr Long) and Trauma Services (Ms Booza), Henry Ford Macomb Hospital, Clinton Township, Michigan; and College of Osteopathic Medicine, Michigan State University, Clinton Township (Dr Turner).

BACKGROUND: Trauma centers are confronted with rising numbers of geriatric trauma patients at high risk for adverse outcomes. Geriatric screening is advocated but not standardized within trauma centers. **OBJECTIVE:** This study aims to describe the impact of Identification of Seniors at Risk (ISAR) screening on patient outcomes and geriatric evaluations. **METHODS:** This study used a pre-/postdesign to assess the impact of ISAR screening on patient outcomes and geriatric evaluations in trauma patients 60 years and older, comparing the periods before (2014-2016) and after (2017-2019) screening implementation. **RESULTS:** Charts for 1,142 patients were reviewed. Comparing pre- to post-ISAR groups, the post-ISAR group with geriatric evaluations were older (M = 82.06, SD = 9.51 vs. M = 83.64, SD = 8.69; p = .026) with higher Injury Severity Scores (M = 9.22, SD = 0.69 vs. M = 9.38, SD = 0.92; p = .001). There was no significant difference in length of stay, intensive care unit length of stay, readmission rate, hospice consults, or in-hospital mortality. In-hospital mortality (n = 8/380, 2.11% vs. n = 4/434, 0.92%) and length of stay in hours (M = 136.49, SD = 67.09 vs. M = 132.53, SD = 69.06) down-trended in the postgroup with geriatric evaluation. **CONCLUSION:** Resources and care coordination efforts can be directed toward specific geriatric screening scores to achieve optimal outcomes. Varying results were found related to outcomes of geriatric evaluations prompting future research.

Emergency Medicine

Moore EE, Moore HB, Thomas SG, Farrell MS, Sixta S, Coleman JR, **Miller JB, Bunch CM**, Waxman D, and Walsh MM. Serial "Death Diamond" TEGs are a bedside indicator of futile resuscitation during massive transfusion. *J Trauma Acute Care Surg* 2023; Epub ahead of print. PMID: 37125795. [Full Text](#)

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Endocrinology and Metabolism

Kaur G, Bhadada SK, Sachdeva N, Saikia UN, Dahiya D, Seth S, Raik S, Behera A, and **Rao SD**. Establishment and characterization of long-term human primary parathyroid tumor subclones derived from Indian PHPT. *3 Biotech* 2023; 13(5):161. PMID: 37152002. [Request Article](#)

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The continuous cell line of epithelial human parathyroid cells has been proven difficult. Previously, PTH-C1 cell line was only established rat parathyroid tissue cell line known to express the parathyroid hormone-related peptide (Pthrp) gene. The paucity of continuous cell line of human parathyroid cells secreting parathyroid hormone (PTH) has imposed hurdle in in vitro assessment of the mechanisms involved in the control of parathyroid cell function and proliferation. The primary cell cultures of human parathyroid cells were derived from parathyroid adenoma tissue biopsy (n = 5). The cells were subsequently subcultured to maintained primary subclones. Karyotyping analysis was performed to analyze the genotypic identity of derived subclones. The expression of calcium-sensing receptor (CaSR) and intact parathyroid hormone (iPTH) were analyzed using immunocytochemistry and immunofluorescence. In the present study, we have used a defined condition medium to generate the continuous culture of human parathyroid cells derived from patients with parathyroid adenoma due to primary hyperparathyroidism. The subcultured primary subclones were maintained epithelial and polygonal morphology, doubling time of approximately 25 h, displaying a diploid chromosome number, and secretion of PTH. This cell line produces PTH and expresses the calcium-sensing receptor (CaSR) known to be involved in parathyroid function. Altogether these findings indicate the uniqueness of the human parathyroid cell line as an in vitro model for cellular and molecular studies on parathyroid physiopathology.

Gastroenterology

Gonzalez HC, and **Gordon SC**. Hepatic Manifestations of Systemic Diseases. *Med Clin North Am* 2023; 107(3):465-489. PMID: 37001948. [Full Text](#)

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In addition to being the primary target of infections such as viral hepatitis, the liver may also be affected by systemic disease. These include bacterial, mycotic, and viral infections, as well as autoimmune and infiltrative diseases. These conditions generally manifest as abnormal liver biochemistries, often with a cholestatic profile, and may present with additional signs/symptoms such as jaundice and fever. A high index of suspicion and familiarity with potential causal entities is necessary to guide appropriate testing, diagnosis, and treatment.

Gastroenterology

Howell R, Johnson C, Allen J, Altaye M, Amin M, Bayan S, Belafsky P, Cervenka B, Desilva B, Dion GR, Ekbohm D, Friedman A, Fritz M, Giliberto JP, Guardiani E, Kasperbauer J, Kim B, Krekeler BN, Kuhn M, Kwak P, Ma Y, Madden LL, Matrka L, **Mayerhoff R**, McKeon M, **Piraka C**, Rosen CA, Tabangin M, Wahab SA, Wilson K, Wright C, Young VN, and Postma G. Surgical Outcomes in Zenker Diverticula: A Multicenter, Prospective, Longitudinal Study. *Laryngoscope* 2023; Epub ahead of print. PMID: 37191092. [Full Text](#)

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OBJECTIVE: To compare improvement in patient-reported outcomes (PROM) in persons undergoing endoscopic and open surgical management of Zenker diverticula (ZD). **METHODOLOGY:** Prospective, multicenter cohort study of all individuals enrolled in the Prospective Outcomes of Cricopharyngeus Hypertonicity (POUCH) Collaborative who underwent surgery for ZD. Patient survey, radiography reports, and the 10-item Eating Assessment Tool (EAT-10) pre- and post-procedure were abstracted from a REDCap database, which summarized means, medians, percentages, and frequencies of. Outcome based on operative intervention (endoscopic vs. open) was compared using t-test, Wilcoxon rank sum test or chi-square test, as appropriate. **RESULTS:** One hundred and forty-seven persons were prospectively followed. The mean age (SD) of the cohort was 68.7 (11.0). Overall, 66% of patients reported 100% improvement in EAT-10; 81% of patients had greater than 75% improvement; and 88% had greater than 50% improvement. Endoscopic was used for n = 109 patients, and open surgical intervention was used for n = 38. The median [interquartile range, IQR] EAT-10 percent improvement for endoscopic treatment was 93.3% [72, 100], and open was 100% [92.3, 100] (p = 0.05). The incidence of intraoperative complications was 3.7% for endoscopic and 7.9% for open surgical management. The median [IQR] in follow-up was 86 and 97.5 days, respectively. **CONCLUSION:** Both endoscopic and open surgical management of ZD provide significant improvement in patient-reported outcomes. The data suggest that open diverticulectomy may provide a modest advantage in symptomatic improvement compared to endoscopic management. The data suggest that the postoperative complication rate is higher in the open surgical group. **LEVEL OF EVIDENCE:** Level 3 Laryngoscope, 2023.

Gastroenterology

Khan N, Almajed MR, Fitzmaurice MG, and Jafri SM. Developments in pharmacotherapeutic agents for hepatitis B - how close are we to a functional cure? *Expert Opin Pharmacother* 2023; 24(9):1001-1011. PMID: 37163255. [Request Article](#)

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INTRODUCTION: Hepatitis B virus (HBV) remains a public health concern given its global prevalence and potential complications including hepatocellular carcinoma (HCC). Current therapies, including nucleos(t)ide analogs (NA) and interferons (IFN), are effective in chronic treatment of HBV but rarely provide a functional cure due to inadequate host response and the presence of viral DNA. Therefore, novel therapies that enhance the innate immune response while suppressing DNA transcription may provide definitive treatment of HBV. **AREAS COVERED:** In this review, the authors provide a brief overview of commonly used agents and their efficacy in treatment of HBV. Newer therapies with direct antiviral agents such as bepirovirsen (antisense oligonucleotide (ASO)) and entry inhibitors such as bulevirtide have shown efficacy in reducing viral load but demonstrate further reductions in conjunction with immune modulators such as therapeutic vaccines. **EXPERT OPINION:** Combination therapy is far superior to monotherapy alone, necessitating the need for both immunomodulators and direct antiviral agents in chronic treatment of HBV. Therapies that target covalently closed circular (cccDNA) with immunomodulators like therapeutic vaccines have shown promising results and may ultimately achieve functional cure. However, therapies need to be evaluated in the context of the patient, considering both financial and socioeconomic factors.

Gastroenterology

Obri MS, Kamran W, Almajed MR, Eid D, and Venkat D. Splenic Artery Embolism in Liver Transplant Patients: A Single-Center Experience. *Cureus* 2023; 15(5):e38599. PMID: 37168407. [Full Text](#)

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BACKGROUND: Hypersplenism, portal hypertension, and ascites have been seen after liver transplants. Patients are usually treated medically with refractory patients potentially undergoing splenectomy. Splenic artery embolism (SAE) is an alternative that can be performed to limit the surgical intervention that may have the benefit of improving portal hypertension. Few studies have studied the effect on main portal vein (MPV) velocities and hepatic artery resistive indices (HARIs) which may be beneficial as markers of portal hypertension. **PURPOSE:** This study aims to evaluate the efficacy and safety of interventional radiology (IR)-guided SAE for the management of portal hypertension in patients who have had liver transplants. **METHODS:** A retrospective analysis was conducted on liver transplant patients who had undergone IR-guided SAE post-transplant at a single tertiary transplant center from 2012 to 2022. The primary outcome of intervention efficacy was quantified by peak HARIs and MPV velocities. Ultrasound with Doppler obtained before and after the intervention was reviewed for these parameters. Secondary outcomes included adverse events at the time of the procedure and within one year of the procedure, the need for splenectomy, and spleen size. **RESULTS:** Twenty-eight patients met the criteria for inclusion. The mean age of patients was 52.5 years (21-71 years) and the time after transplant was 149.5 days (2-1588 days). About 96.4% of SAEs were technically successful (n=27). Twenty-one patients had MPV velocities available, and 24 had peak HARIs available. In these patients, HARIs decreased by an average of 0.063 (95% CI 0.014-0.112) after SAE. MPV velocity decreased by an average of 47.2 cm/s (95% CI 27.3-67.1) after SAE. About 10.4% of patients (n=3) developed a procedure-related complication, all of which were femoral access site aneurysms. No (0) patients suffered from bleeding, infections, or abscesses after the procedure. About 10.7% of patients (n=3) required splenectomy after SAE: one splenectomy was due to technical failure and two were due to refractory symptoms. **CONCLUSION:** We performed one of the first analyses on MPV and RI and showed that our patients saw an improvement post-embolization with a theoretical improvement in portal hypertension. The complication rate and risk of infection seem to be acceptable risks, making SAE a feasible option for management.

Hematology-Oncology

Bartlett S, Nagaraja TN, Griffith B, Farmer KG, Van Harn M, Haider S, Hunt RJ, Cabral G, Knight RA, Valadie OG, Brown SL, Ewing JR, and Lee IY. Persistent Peri-Ablation Blood-Brain Barrier Opening After Laser Interstitial Thermal Therapy for Brain Tumors. *Cureus* 2023; 15(4):e37397. PMID: 37182017. [Full Text](#)

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Neurological Surgery, Henry Ford Health, Detroit, USA.
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Radiation Oncology, Henry Ford Health, Detroit, USA.

Purpose Laser interstitial thermal therapy (LITT) is a minimally invasive, image-guided, cytoreductive procedure to treat recurrent glioblastoma. This study implemented dynamic contrast-enhanced magnetic resonance imaging (DCE-MRI) methods and employed a model selection paradigm to localize and quantify post-LITT blood-brain barrier (BBB) permeability in the ablation vicinity. Serum levels of neuron-specific enolase (NSE), a peripheral marker of increased BBB permeability, were measured. **Methods** Seventeen patients were enrolled in the study. Using an enzyme-linked immunosorbent assay, serum NSE was measured preoperatively, 24 hours postoperatively, and at two, eight, 12, and 16 weeks postoperatively, depending on postoperative adjuvant treatment. Of the 17 patients, four had longitudinal DCE-MRI data available, from which blood-to-brain forward volumetric transfer constant (K(trans)) data were assessed. Imaging was performed preoperatively, 24 hours postoperatively, and between two and eight weeks postoperatively. **Results** Serum NSE increased at 24 hours following ablation ($p=0.04$), peaked at two weeks, and returned to baseline by eight weeks postoperatively. K(trans) was found to be elevated in the peri-ablation periphery 24 hours after the procedure. This increase persisted for two weeks. **Conclusion** Following the LITT procedure, serum NSE levels and peri-ablation K(trans) estimated from DCE-MRI demonstrated increases during the first two weeks after ablation, suggesting transiently increased BBB permeability.

Hematology-Oncology

Gadgeel SM, Miao J, Riess JW, Moon J, Mack PC, Gerstner GJ, Burns TF, Taj A, Akerley WL, Dragnev KH, Laudi N, Redman MW, Gray JE, Gandara DR, and Kelly K. Phase II study of docetaxel and trametinib in patients with KRAS mutation positive recurrent non-small cell lung cancer (NSCLC) (SWOG S1507, NCT-02642042). *Clin Cancer Res* 2023; Epub ahead of print. PMID: 37233987. [Full Text](#)

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Michigan CRC NCORP/St.Mary's of Michigan, United States.
University of Utah, Salt Lake City, UT, United States.
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Moffitt Cancer Center, Tampa, Florida, United States.
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PURPOSE: Efficacy of MEK inhibitors in KRAS+ NSCLC may differ based on specific KRAS mutations and co-mutations. Our hypothesis was that docetaxel and trametinib would improve activity in KRAS+ NSCLC and specifically in KRAS G12C NSCLC. **PATIENTS AND METHODS:** S1507 is a single arm phase II assessing the response rate (RR) with docetaxel plus trametinib in recurrent KRAS+ NSCLC and secondarily in the G12C subset. The accrual goal was 45 eligible patients with at least 25 with G12C mutation. The design was 2-stage design to rule out a 17% RR, within the overall population at the 1-sided 3% level and within the G12C subset at the 5% level. **RESULTS:** Between July 18, 2016 and March 15, 2018, 60 patients were enrolled with 53 eligible and 18 eligible in the G12C cohort. The RR was 34% (95%CI- 22-48) overall and 28% (95%CI- 10-53) in G12C. Median PFS and OS were 4.1 and 3.3 months and 10.9 and 8.8 months, overall and in the subset, respectively. Common toxicities were fatigue,

diarrhea, nausea, rash, anemia, mucositis, neutropenia. Among 26 patients with known status for TP53 (10+ve) and STK11 (5+ve), OS (HR:2.85, 95%CI 1.16-7.01) and RR (0% vs. 56%, p = 0.004) were worse in patients with TP53 mutated versus wild type cancers. CONCLUSIONS: RRs were significantly improved in the overall population. Contrary to pre-clinical studies, the combination showed no improvement in efficacy in G12C patients. Co-mutations may influence therapeutic efficacy of KRAS directed therapies and are worthy of further evaluation.

Hematology-Oncology

Geletu A, Emole J, Abu Sayf A, Hinojosa OA, and Gastesi A. A Case of Right Ventricular Failure Secondary to Acute Chest Syndrome Managed With Early Red Cell Exchange Transfusion. *Cureus* 2023; 15(4):e37729. PMID: 37214046. [Full Text](#)

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Patients with sickle cell disease are at risk of vaso-occlusive crises including acute chest syndrome (ACS) and pulmonary hypertension. ACS is a life-threatening complication of sickle cell disease and is associated with increased morbidity and mortality. It is known that pulmonary pressures increase during episodes of acute chest syndrome and may lead to acute right ventricular failure leading to increased morbidity and mortality. Given the paucity of randomized controlled trials, the management of ACS and pulmonary hypertension in the setting of a sickle cell crisis largely relies on expert opinion. We present a case of acute chest syndrome complicated by acute right ventricular failure that was managed with prompt red cell exchange transfusion with favorable clinical outcomes.

Hematology-Oncology

Gonzalez-Mosquera LF, Moscoso B, Tobar P, Cardenas-Maldonado D, Podrumar AI, Mesa R, and Cuenca JA. Sepsis-related outcomes of patients with Philadelphia-negative myeloproliferative neoplasms. *Cancer Invest* 2023; 1-20. Epub ahead of print. PMID: 36862101. [Request Article](#)

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We analyzed the National Inpatient Sample (NIS) database to study the sepsis-related outcomes in patients with Philadelphia negative myeloproliferative neoplasms (MPN). A total of 82,087 patients were included, most had essential thrombocytosis (83.7%), followed by polycythemia vera (13.7%), and primary myelofibrosis (2.6%). Sepsis was diagnosed in 15,789 (19.2%) patients and their mortality rate was higher than non-septic patients (7.5% vs 1.8%; P<.001). Sepsis was the most significant risk factor of mortality (aOR, 3.84; 95% CI, 3.51-4.21), others included liver disease (aOR, 2.42; 95% CI, 2.11-2.78), pulmonary embolism (aOR, 2.26; 95% CI, 1.83-2.80), cerebrovascular disease (aOR, 2.05; 95% CI, 1.81-2.33), and myocardial infarction (aOR, 1.73; 95% CI, 1.52-1.96).

Hematology-Oncology

Ho TA, Patterson KM, Gadgeel SM, Kenney RM, and Veve MP. Cancer is chronic but antimicrobial stewardship is iconic: A retrospective cohort of optimal antibiotic use in ambulatory oncology clinics. *Antimicrob Steward Healthc Epidemiol* 2023; 3(1):e81. PMID: 37179765. [Full Text](#)

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OBJECTIVE: To evaluate antibiotic prescribing in ambulatory oncology clinics and to identify opportunities to improve antibiotic use. **METHODS:** Retrospective cohort of adult patients who received care at 4 ambulatory oncology clinics from May 2021 to December 2021. Patients were included if they actively followed with a hematologist-oncologist for a cancer diagnosis and received an antibiotic prescription for uncomplicated upper respiratory tract infection (URTI), lower respiratory tract infection (LRTI), urinary tract infection (UTI), or acute bacterial skin-skin structure infection (ABSSSI) at an oncology clinic. The primary outcome was receipt of optimal antibiotic therapy, defined as a composite of drug, dose, and duration according to local and national guidelines. Patient characteristics were described and compared; predictors of optimal antibiotic use were identified using multivariable logistic regression. **RESULTS:** In total, 200 patients were included in this study: 72 (36%) received optimal antibiotics and 128 (64%) received suboptimal antibiotics. The proportions of patients receiving optimal therapy by indication were ABSSSI (52%), UTI (35%), URTI (27%), and LRTI (15%). The most common suboptimal prescribing components were dose (54%), selection (53%) and duration (23%). After adjusting for female sex and LRTI, ABSSSI (adjusted odds ratio, 2.28; 95% confidence interval, 1.19-4.37) was associated with optimal antibiotic therapy. Antibiotic-associated adverse drug events occurred in 7 patients; 6 occurred patients who received prolonged durations and 1 occurred in a patient who received an optimal duration ($P = .057$). **CONCLUSIONS:** Suboptimal antibiotic prescribing in ambulatory oncology clinics is common and mostly driven by antibiotic selection and dosing. Duration of therapy may also be an area for improvement as national oncology guidelines have not adopted short-course therapy.

Hematology-Oncology

Khatib SA, Adil K, Schultz L, Gadgeel S, Popoff A, Ajlouni M, Simoff M, Movsas B, and Feldman A. Clinical Outcome in Patients With Early-Stage Small Cell Lung Cancer Treated With Surgery or Radiation in the Absence of Prophylactic Cranial Irradiation: A Single-Center Retrospective Study. *Adv Radiat Oncol* 2023; 8(4):101190. PMID: 37152487. [Full Text](#)

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PURPOSE: As screening chest computed tomography for patients at high risk for cancer has become more widely accepted, increasing numbers of patients with early-stage small cell lung cancer (SCLC) are being diagnosed. Although surgery is an accepted option for patients with early-stage SCLC, for patients who decline or cannot undergo surgery, stereotactic body radiation treatment (SBRT) is an alternative. Although prophylactic cranial irradiation (PCI) improves survival in patients with limited-stage SCLC, PCI for early-stage SCLC (stage T1-T2) has not been explored. This study defines survival and recurrence patterns in patients with early-stage SCLC who were treated with surgery or SBRT in the absence of PCI. **METHODS AND MATERIALS:** In this single-institution retrospective study, 14 patients diagnosed with early-stage SCLC (stage T1-T2) between July 2015 and May 2021 at a single tertiary care hospital were treated with SBRT or surgery with no PCI. Primary outcomes were locoregional cancer recurrence, distant recurrence, recurrence-free survival, and overall survival. The secondary outcome was development of brain metastasis. Analyses included Cox regression, Kaplan-Meier survival, and log-rank tests. **RESULTS:** A total of 14 patients (5 women and 9 men) were included in the study: 9 with stage T1 and 5 with stage T2 SCLC. Six patients (43%) received SBRT and 8 (57%) had surgical treatment. All patients except 1 received adjuvant chemotherapy. Median follow-up was 14.3 months (range, 2.4-64.4 months), and the median age at diagnosis was 71.5 years (range, 54-81 years). Cox regression and log-rank tests showed no significant differences in any outcomes between the surgery and SBRT groups, and

no patients developed brain metastases during the study period. **CONCLUSIONS:** Data are lacking regarding the benefit of PCI in early-stage SCLC. Although the sample size in this study was too small to draw any conclusions, the findings add to the ongoing dialogue regarding the importance of PCI in this patient population. No difference was identified in survival and cancer recurrence in patients who received either surgery or SBRT in the absence of PCI.

Hematology-Oncology

Lu S, Kim HS, Cao Y, Bedi K, Zhao L, Narayanan IV, Magnuson B, Gu Y, Yang J, Yi Z, Babaniamansour S, Shameon S, Xu C, Paulsen MT, Qiu P, Jeyarajan S, Ljungman M, Thomas D, Dou Y, **Crawford H**, di Magliano MP, Ge K, Yang B, and Shi J. KMT2D links TGF- β signaling to noncanonical activin pathway and regulates pancreatic cancer cell plasticity. *Int J Cancer* 2023; Epub ahead of print. PMID: 37140208. [Full Text](#)

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Although KMT2D, also known as MLL2, is known to play an essential role in development, differentiation, and tumor suppression, its role in pancreatic cancer development is not well understood. Here, we discovered a novel signaling axis mediated by KMT2D, which links TGF- β to the activin A pathway. We found that TGF- β upregulates a microRNA, miR-147b, which in turn leads to post-transcriptional silencing of KMT2D. Loss of KMT2D induces the expression and secretion of activin A, which activates a noncanonical p38 MAPK-mediated pathway to modulate cancer cell plasticity, promote a mesenchymal phenotype, and enhance tumor invasion and metastasis in mice. We observed a decreased KMT2D expression in human primary and metastatic pancreatic cancer. Furthermore, inhibition or knockdown of activin A reversed the protumoral role of KMT2D loss. These findings support a tumor-suppressive role of KMT2D in pancreatic cancer and identify miR-147b and activin A as novel therapeutic targets.

Hematology-Oncology

Pichardo R, Abu Omar Y, **Wani K**, **Shango K**, and Wang D. Uncovering the Burden of Immune-Related Adverse Events in Immunotherapy: Insights from a Nationally Representative Sample. *Target Oncol* 2023; 18(3):451-461. PMID: 37178436. [Full Text](#)

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BACKGROUND: Immune checkpoint inhibitors have shown promising efficacy in multiple malignancies and, therefore, have been increasingly used over the past decade. Clinical data have suggested anti-cancer efficacy associated with immune-related adverse events that could have added healthcare resource utilization and costs. **OBJECTIVE:** We used a nationwide dataset to investigate the association between immune-related adverse events and healthcare resource utilization, charges, and mortality among patients receiving various immune checkpoint inhibitors for indicated cancers. **METHODS:** We performed a retrospective analysis of the National Inpatient Sample to identify patients hospitalized in the

USA for immunotherapy between October 2015 and 2018. Data between patients who developed immune-related adverse events were compared to those who did not. Baseline characteristics, inpatient complications, and associated charges were collected and analyzed between these two groups. RESULTS: Patients who developed immune-related adverse events in the hospital had high incidences of acute kidney injury, non-septic shock, and pneumonia, and managing these complications significantly contributed to higher healthcare resource utilization. The average charge of admission was highest in patients who developed an infusion reaction, followed by colitis, and adrenal insufficiency. In terms of cancer type, renal cell carcinoma had the highest charges, followed by Merkel cell carcinoma. CONCLUSIONS: Immune checkpoint inhibitor-based regimens have shifted the treatment landscape among multiple malignancies and their use continues to expand. However, a significant proportion of patients still develop severe adverse effects leading to increased healthcare costs and impacting patients' quality of life. Closer attention should be given to recognizing and managing immune-related adverse events according to guidelines across healthcare facilities and clinical practice settings.

Hospital Medicine

Gupta K, Baloch F, **Kakar TS**, Agarwal H, Rawley B, Khan UI, Iqbal R, Barolia R, and Virani SS. The Pandemic of Coronary Heart Disease in South Asia: What Clinicians Need to Know. *Curr Atheroscler Rep* 2023; Epub ahead of print. PMID: 37233946. [Full Text](#)

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PURPOSE OF REVIEW: South Asia has around 1/6(th) of the current global population. Epidemiological studies suggest that South Asians living in South Asia and diaspora are at an increased risk of premature atherosclerotic cardiovascular diseases (ASCVDs). This is due to an interplay of genetic, acquired, and environmental risk factors. Due to its increasing share of the global population, clinicians need to know the reasons for this early predisposition, and strategies for early identification and mitigation. RECENT FINDINGS: South Asians have earlier onset of cardiometabolic risk factors such as insulin resistance, hypertension, and central adiposity. This increased risk is seen in both native South Asians and the diaspora. South Asians have earlier onset of ASCVD due to an earlier onset of cardiometabolic risk factors. Health promotion and early identification of these risk factors are essential to mitigate this ongoing crisis.

Hospital Medicine

Porres-Aguilar M, Rosovsky RP, Jiménez D, Mukherjee D, Rivera-Lebron BN, **Kaatz S**, Anaya-Ayala JE, and Jerjes-Sánchez C. "Pulmonary embolism response teams: changing the paradigm in the care for acute pulmonary embolism": reply. *J Thromb Haemost* 2023; 21(5):1390-1392. PMID: 37121622. [Full Text](#)

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Hypertension and Vascular Research

Spires DR, Schibalski RS, Domondon M, Clarke C, Perez S, Anwar F, Burns E, Saeed MI, Walton SD, Zamaro AS, Amoah T, **Arkhipov SN**, Christopher CJ, Campagna SR, Mattson DL, **Pavlov TS**, and Ilatovskaya DV. Renal Histaminergic System and Acute Effects of Histamine Receptor 2 Blockade on Renal Damage in the Dahl Salt-Sensitive Rat. *Am J Physiol Renal Physiol* 2023; Epub ahead of print. PMID: 37227223. [Full Text](#)

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Histamine is involved in the immune response, vasodilation, neurotransmission, and gastric acid secretion. Although elevated histamine levels and increased expression of histamine metabolizing enzymes have been reported in renal disease, there is gap in knowledge regarding the mechanisms of histamine-related pathways in the kidney. We report here that all four histamine receptors, as well as enzymes responsible for metabolism of histamine are expressed in human and rat kidney tissues. In this study, we hypothesized that the histaminergic system plays a role in salt-induced kidney damage in Dahl Salt-Sensitive (DSS) rat, a model characterized with inflammation-driven renal lesions. To induce renal damage related to salt-sensitivity, DSS rats were challenged with a 21 days of high salt diet (HS, 4% NaCl); normal salt diet (NS, 0.4% NaCl) fed rats were used as a control. We observed lower histamine decarboxylase (HDC), and higher histamine N-methyltransferase (HNMT) levels in HS diet-fed rats, indicative of a shift in the histaminergic tone; metabolomics showed higher histamine and histidine levels in the kidneys HS diet-fed rats, while plasma levels for both compounds were lower. Acute systemic inhibition of histamine receptor 2 (HR2) in the DSS rat revealed that it lowered vasopressin receptor 2 and AQP2 abundance in the kidney. In summary, we established here the existence of the local histaminergic system, revealed a shift in the renal histamine balance during salt-induced kidney damage, and provided evidence that blockage of HR2 in the DSS rat affects water balance and urine concentrating mechanisms.

Infectious Diseases

Gudipati S, Shallal A, Peterson E, Cook B, and Markowitz N. Increase in False Positive Fourth Generation HIV Tests in Patients with COVID-19 Disease. *Clin Infect Dis* 2023; Epub ahead of print. PMID: 37158382. [Full Text](#)

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BACKGROUND: We observed an increase in the frequency of false positive (FP) HIV test results correlating with SARS-CoV-2 prevalence, which led us to measure FP rates of a laboratory-based fourth

generation HIV antigen/antibody test among those with polymerase-chain reaction (PCR)-confirmed infection with SARS-CoV-2 compared to the FP rate of those testing PCR-negative for SARS-CoV-2. METHODS: All those PCR tested for SARS-CoV-2 result within 2 weeks of a HIV fourth generation assay were selected. Positive HIV fourth generation assays were independently reviewed and divided into groups of FP, true positives (TP), and presumptive negatives (PN). Variables included age, race, ethnicity, gender, pregnancy, and COVID-19 immunization status. Associations with positive SARS-CoV-2 tests were assessed using linear logistic regression. A multivariate logistic regression was used to assess sets of variables. RESULTS: There were 31,910 medical records that met criteria. The frequency of SARS-CoV-2 positive tests was then calculated in groups of HIV TP, FP, and PN. In total, 31,575 patients had a PN HIV test result, 248 patients had a TP, and 87 patients had a FP. Those with HIV FP tests had the highest percentage of COVID-19 positive test results at 19.5%, which was significantly higher than HIV PN (11.3%; $p = 0.016$) and HIV TP (7.7%; $p = 0.002$). After adjustment for all covariates, only FP HIV was significantly associated with COVID-19 (odds ratio 4.22; $p = 0.001$). CONCLUSIONS: This study reveals those patients with positive SARS-CoV-2 PCR tests are significantly more likely to have a FP fourth generation HIV test than those with negative SARS-CoV-2 PCR tests.

Infectious Diseases

Yared N. The Role of Point-of-Care Testing in Specific Populations. *Clin Lab Med* 2023; 43(2):181-187. PMID: 37169441. [Full Text](#)

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Diagnostics for particular populations outside of traditional health care settings have driven development of point-of-care testing (POCT). POCT is particularly suitable for patients with infections conditions to mitigate infection spread via its provision in venues with less concern for stigma. Patients in rural or resource-limited settings can benefit from POCT through more timely diagnosis and linkage-to-care. However, gaps in POCT availability compared with better-resourced, urban counterparts persist. Leveraging communication technologies, using mobile clinics, changing national health care policy, and implementing novel geospatial science concepts can address limitations of POCT use and reduce POCT access gaps in these settings.

Internal Medicine

Abdullah KM, **Alsuraimi A**, Kagbo-Kue S, and Vela M. Gastroparesis: an under-recognised manifestation of systemic amyloidosis. *BMJ Case Rep* 2023; 16(5). PMID: 37130641. [Full Text](#)

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Gastrointestinal (GI) amyloidosis can be acquired or genetic and is commonly caused by chronic inflammatory illnesses (AA amyloidosis), haematological malignancies (AL amyloidosis) and end-stage renal disease (beta-2 microglobulin amyloidosis). The accumulation of these aberrant proteins disrupts the structures and functions of many organs; the least common of which is the GI tract. GI presentations depend on the type, location and amount of amyloid deposition. Symptoms can range from nausea and vomiting to fatal GI bleeds. Pathological examination of the involved tissue with characteristic green birefringence under polarised light is used to confirm the diagnosis. Patients should be considered for further evaluation to rule out additional organ involvement, notably cardiac and renal. We present a patient with amyloidosis-induced gastroparesis, an under-recognised presentation of systemic amyloidosis in the gastroenterology system.

Internal Medicine

Geletu A, Emole J, Abu Sayf A, Hinojosa OA, and **Gastesi A**. A Case of Right Ventricular Failure Secondary to Acute Chest Syndrome Managed With Early Red Cell Exchange Transfusion. *Cureus* 2023; 15(4):e37729. PMID: 37214046. [Full Text](#)

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Patients with sickle cell disease are at risk of vaso-occlusive crises including acute chest syndrome (ACS) and pulmonary hypertension. ACS is a life-threatening complication of sickle cell disease and is associated with increased morbidity and mortality. It is known that pulmonary pressures increase during episodes of acute chest syndrome and may lead to acute right ventricular failure leading to increased morbidity and mortality. Given the paucity of randomized controlled trials, the management of ACS and pulmonary hypertension in the setting of a sickle cell crisis largely relies on expert opinion. We present a case of acute chest syndrome complicated by acute right ventricular failure that was managed with prompt red cell exchange transfusion with favorable clinical outcomes.

Internal Medicine

Gupta K, Baloch F, **Kakar TS**, Agarwal H, Rawley B, Khan UI, Iqbal R, Barolia R, and Virani SS. The Pandemic of Coronary Heart Disease in South Asia: What Clinicians Need to Know. *Curr Atheroscler Rep* 2023; Epub ahead of print. PMID: 37233946. [Full Text](#)

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PURPOSE OF REVIEW: South Asia has around 1/6(th) of the current global population. Epidemiological studies suggest that South Asians living in South Asia and diaspora are at an increased risk of premature atherosclerotic cardiovascular diseases (ASCVDs). This is due to an interplay of genetic, acquired, and environmental risk factors. Due to its increasing share of the global population, clinicians need to know the reasons for this early predisposition, and strategies for early identification and mitigation. **RECENT FINDINGS:** South Asians have earlier onset of cardiometabolic risk factors such as insulin resistance, hypertension, and central adiposity. This increased risk is seen in both native South Asians and the diaspora. South Asians have earlier onset of ASCVD due to an earlier onset of cardiometabolic risk factors. Health promotion and early identification of these risk factors are essential to mitigate this ongoing crisis.

Internal Medicine

Guzman C, Zaclli A, and **Molinari J**. Streptococcus cristatus bacteremia in a patient with poor oral hygiene: a case report. *J Med Case Rep* 2023; 17(1):218. PMID: 37194080. [Full Text](#)

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BACKGROUND: Streptococcus cristatus is a member of the Mitis streptococcus group. Like other members of this group, it resides on mucosal surfaces of the oral cavity. However, little is known about its ability to cause disease as there are only a handful of cases in the literature. Two of these cases involved infective endocarditis with significant complications. However, these cases involved additional microbes, limiting the inferences about the pathogenicity of Streptococcus cristatus. **CASE PRESENTATION:** A 59-

year-old African American male with end-stage cryptogenic cirrhosis and ascites presented with fatigue and confusion. A paracentesis was negative for spontaneous bacterial peritonitis, but two separate blood cultures grew *Streptococcus cristatus*. Our patient had a history of dental caries and poor oral hygiene, which were likely the source of the infection. Echocardiograms revealed new aortic regurgitation, indicating "possible endocarditis" per the Modified Duke Criteria. However, since his clinical picture and cardiac function were reassuring, we elected against treatment for infective endocarditis. He was treated for bacteremia with a 2-week course of cephalosporins consisting of 8 days of ceftriaxone, transitioning to cefpodoxime after discharge. Despite having end-stage liver disease, our patient did not experience any significant complications from the infection. **CONCLUSION:** A patient with end-stage cirrhosis and poor oral hygiene developed bacteremia with an oral bacterium called *Streptococcus cristatus*. Unlike previous cases in literature, our patient did not meet criteria for a definitive diagnosis of infective endocarditis, and he experienced no other complications from the infection. This suggests coinfectants may have been primarily responsible for the severe cardiac sequelae in prior cases, whereas isolated *Streptococcus cristatus* infection may be relatively mild.

Internal Medicine

Haque MZ, Akbar T, **Saleem A**, and Husain M. Becker muscular dystrophy and successful intervention with mechanical thrombectomy of right atrial clot-in-transit with pulmonary embolism. *Clin Case Rep* 2023; 11(5):e7390. PMID: 37229396. [Full Text](#)

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This case report discusses the effectiveness of the Inari FlowTrieve system in treating a right atrial (RA) clot in-transit in a 55-year-old male patient with Becker's muscular dystrophy (BMD). BMD is an X-linked recessive muscle disease caused by mutations in the gene that code for the protein dystrophin, which is associated with partially functional dystrophin in variable amounts. Right heart thrombi (RHT) are thrombi that can be visualized in the right atrium, right ventricle, or proximal surrounding vasculature. The Inari FlowTrieve system was used to treat RA clot in-transit and removed acute, subacute, and chronic clot in a single session without the use of thrombolytics and subsequent ICU stay. The estimated blood loss with the FlowSaver system was approximately 150 mL. This report complements the FLARE study by highlighting the effectiveness of the FlowTrieve system for mechanical thrombectomy of RA clot-in-transit in a patient with BMD.

Internal Medicine

Khan N, Almajed MR, Fitzmaurice MG, and Jafri SM. Developments in pharmacotherapeutic agents for hepatitis B - how close are we to a functional cure? *Expert Opin Pharmacother* 2023; 24(9):1001-1011. PMID: 37163255. [Request Article](#)

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INTRODUCTION: Hepatitis B virus (HBV) remains a public health concern given its global prevalence and potential complications including hepatocellular carcinoma (HCC). Current therapies, including nucleos(t)ide analogs (NA) and interferons (IFN), are effective in chronic treatment of HBV but rarely provide a functional cure due to inadequate host response and the presence of viral DNA. Therefore, novel therapies that enhance the innate immune response while suppressing DNA transcription may provide definitive treatment of HBV. **AREAS COVERED:** In this review, the authors provide a brief overview of commonly used agents and their efficacy in treatment of HBV. Newer therapies with direct antiviral agents such as bepirovirsen (antisense oligonucleotide (ASO)) and entry inhibitors such as bulevirtide have shown efficacy in reducing viral load but demonstrate further reductions in conjunction with immune modulators such as therapeutic vaccines. **EXPERT OPINION:** Combination therapy is far superior to monotherapy alone, necessitating the need for both immunomodulators and direct antiviral

agents in chronic treatment of HBV. Therapies that target covalently closed circular (cccDNA) with immunomodulators like therapeutic vaccines have shown promising results and may ultimately achieve functional cure. However, therapies need to be evaluated in the context of the patient, considering both financial and socioeconomic factors.

Internal Medicine

Obri MS, Goleniak R, Almajed MR, Eid D, and Entz A. False Reassurance From a Stool Test: A Delayed Cancer Diagnosis. *Cureus* 2023; 15(4):e38107. PMID: 37252586. [Full Text](#)

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Colorectal cancer (CRC) is an increasingly prevalent condition in the United States and the world. Numerous screening tools have been created to help prevent and identify early cases of CRC, which have led to better outcomes for patients. These screening tools range from stool tests to more invasive procedures like a colonoscopy. With this array of screening options, patients are often presented with a bevy of choices in their primary care clinic and may have difficulty understanding the difference between screening and treatment. Popular culture has also influenced these decisions as both traditional media and social media have weighed in on the experience with these screening tools. We present a unique case where our patient tested negative on a stool screening exam and proceeded to be diagnosed with CRC within the negative screening period. The case was complicated by the patient's reluctance to undergo a colonoscopy and a unique combination of symptoms that led to a difficult diagnosis.

Internal Medicine

Obri MS, Kamran W, Almajed MR, Eid D, and Venkat D. Splenic Artery Embolism in Liver Transplant Patients: A Single-Center Experience. *Cureus* 2023; 15(5):e38599. PMID: 37168407. [Full Text](#)

Internal Medicine, Henry Ford Health System, Detroit, USA.
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BACKGROUND: Hypersplenism, portal hypertension, and ascites have been seen after liver transplants. Patients are usually treated medically with refractory patients potentially undergoing splenectomy. Splenic artery embolism (SAE) is an alternative that can be performed to limit the surgical intervention that may have the benefit of improving portal hypertension. Few studies have studied the effect on main portal vein (MPV) velocities and hepatic artery resistive indices (HARIs) which may be beneficial as markers of portal hypertension. **PURPOSE:** This study aims to evaluate the efficacy and safety of interventional radiology (IR)-guided SAE for the management of portal hypertension in patients who have had liver transplants. **METHODS:** A retrospective analysis was conducted on liver transplant patients who had undergone IR-guided SAE post-transplant at a single tertiary transplant center from 2012 to 2022. The primary outcome of intervention efficacy was quantified by peak HARIs and MPV velocities. Ultrasound with Doppler obtained before and after the intervention was reviewed for these parameters. Secondary outcomes included adverse events at the time of the procedure and within one year of the procedure, the need for splenectomy, and spleen size. **RESULTS:** Twenty-eight patients met the criteria for inclusion. The mean age of patients was 52.5 years (21-71 years) and the time after transplant was 149.5 days (2-1588 days). About 96.4% of SAEs were technically successful (n=27). Twenty-one patients had MPV velocities available, and 24 had peak HARIs available. In these patients, HARIs decreased by an average of 0.063 (95% CI 0.014-0.112) after SAE. MPV velocity decreased by an average of 47.2 cm/s (95% CI 27.3-67.1) after SAE. About 10.4% of patients (n=3) developed a procedure-related complication, all of which were femoral access site aneurysms. No (0) patients suffered from bleeding, infections, or abscesses after the procedure. About 10.7% of patients (n=3) required splenectomy after SAE: one splenectomy was due to technical failure and two were due to refractory symptoms. **CONCLUSION:** We performed one of the first analyses on MPV and RI and showed that our patients saw an improvement post-embolization with a theoretical improvement in portal hypertension. The complication rate and risk of infection seem to be acceptable risks, making SAE a feasible option for management.

Internal Medicine

Pichardo R, Abu Omar Y, **Wani K**, **Shango K**, and Wang D. Uncovering the Burden of Immune-Related Adverse Events in Immunotherapy: Insights from a Nationally Representative Sample. *Target Oncol* 2023; 18(3):451-461. PMID: 37178436. [Full Text](#)

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BACKGROUND: Immune checkpoint inhibitors have shown promising efficacy in multiple malignancies and, therefore, have been increasingly used over the past decade. Clinical data have suggested anti-cancer efficacy associated with immune-related adverse events that could have added healthcare resource utilization and costs. **OBJECTIVE:** We used a nationwide dataset to investigate the association between immune-related adverse events and healthcare resource utilization, charges, and mortality among patients receiving various immune checkpoint inhibitors for indicated cancers. **METHODS:** We performed a retrospective analysis of the National Inpatient Sample to identify patients hospitalized in the USA for immunotherapy between October 2015 and 2018. Data between patients who developed immune-related adverse events were compared to those who did not. Baseline characteristics, inpatient complications, and associated charges were collected and analyzed between these two groups. **RESULTS:** Patients who developed immune-related adverse events in the hospital had high incidences of acute kidney injury, non-septic shock, and pneumonia, and managing these complications significantly contributed to higher healthcare resource utilization. The average charge of admission was highest in patients who developed an infusion reaction, followed by colitis, and adrenal insufficiency. In terms of cancer type, renal cell carcinoma had the highest charges, followed by Merkel cell carcinoma. **CONCLUSIONS:** Immune checkpoint inhibitor-based regimens have shifted the treatment landscape among multiple malignancies and their use continues to expand. However, a significant proportion of patients still develop severe adverse effects leading to increased healthcare costs and impacting patients' quality of life. Closer attention should be given to recognizing and managing immune-related adverse events according to guidelines across healthcare facilities and clinical practice settings.

Neurology

Akhtar MS, **Akhter N**, Talat A, Alharbi RA, Sindi AAA, Klufah F, Alyahyawi HE, Alruwetei A, Ahmad A, Zamzami MA, Deo S, **Husain SA**, Badi OA, and Khan MJ. Association of mutation and expression of the brother of the regulator of imprinted sites (BORIS) gene with breast cancer progression. *Oncotarget* 2023; 14:528-541. PMID: 37235839. [Full Text](#)

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INTRODUCTION: The BORIS, 11 zinc-finger transcription factors, is a member of the cancer-testis antigen (CTA) family. It is mapped to chromosome number 20q13.2 and this region is genetically linked to the early onset of breast cancer. The current study analyzed the correlation between BORIS mutations and the expression of the protein in breast cancer cases. **MATERIALS AND METHODS:** A population-based study including a total of 155 breast cancer tissue samples and an equal number of normal adjacent tissues from Indian female breast cancer patients was carried out. Mutations of the BORIS gene were detected by polymerase chain reaction-single standard confirmation polymorphisms (PCR-SSCP) and automated DNA sequencing and by immunohistochemistry for BORIS protein expression were performed. The observed findings were correlated with several clinicopathological parameters to find out the clinical relevance of associations. **RESULTS:** Of all the cases 16.12% (25/155) showed mutations in the BORIS gene. The observed mutations present on codon 329 are missense, leading to Val> Ile (G>A) change on exon 5 of the BORIS gene. A significant association was observed between mutations of the BORIS gene and some clinicopathological features like nodal status ($p = 0.013$), estrogen receptor (ER) expression ($p = 0.008$), progesterone receptor (PR) expression ($p = 0.039$), clinical stage ($p = 0.010$) and menopausal status ($p = 0.023$). The protein expression analysis showed 20.64% (32/155) samples showing low or no expression (+), 34.19% (53/155) with moderate expression (++), and 45.17% (70/155) showing high expression (+++) of BORIS protein. A significant association was observed between the expression of BORIS protein and clinicopathological features like clinical stage ($p = 0.013$), nodal status ($p = 0.049$), ER expression ($p = 0.039$), and PR expression ($p = 0.027$). When mutation and protein expression were correlated in combination with clinicopathological parameters a significant association was observed in the category of high (+++) level of BORIS protein expression ($p = 0.017$). **CONCLUSION:** The BORIS mutations and high protein expression occur frequently in carcinoma of the breast suggesting their association with the onset and progression of breast carcinoma. Further, the BORIS has the potential to be used as a biomarker.

Neurology

Bartlett S, Nagaraja TN, Griffith B, Farmer KG, Van Harn M, Haider S, Hunt RJ, Cabral G, Knight RA, Valadie OG, Brown SL, Ewing JR, and Lee IY. Persistent Peri-Ablation Blood-Brain Barrier Opening After Laser Interstitial Thermal Therapy for Brain Tumors. *Cureus* 2023; 15(4):e37397. PMID: 37182017. [Full Text](#)

Neurosurgery, Wayne State University School of Medicine, Detroit, USA.

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Purpose Laser interstitial thermal therapy (LITT) is a minimally invasive, image-guided, cytoreductive procedure to treat recurrent glioblastoma. This study implemented dynamic contrast-enhanced magnetic resonance imaging (DCE-MRI) methods and employed a model selection paradigm to localize and quantify post-LITT blood-brain barrier (BBB) permeability in the ablation vicinity. Serum levels of neuron-specific enolase (NSE), a peripheral marker of increased BBB permeability, were measured. Methods Seventeen patients were enrolled in the study. Using an enzyme-linked immunosorbent assay, serum NSE was measured preoperatively, 24 hours postoperatively, and at two, eight, 12, and 16 weeks postoperatively, depending on postoperative adjuvant treatment. Of the 17 patients, four had longitudinal DCE-MRI data available, from which blood-to-brain forward volumetric transfer constant ($K(\text{trans})$) data were assessed. Imaging was performed preoperatively, 24 hours postoperatively, and between two and eight weeks postoperatively. Results Serum NSE increased at 24 hours following ablation ($p=0.04$), peaked at two weeks, and returned to baseline by eight weeks postoperatively. $K(\text{trans})$ was found to be elevated in the peri-ablation periphery 24 hours after the procedure. This increase persisted for two weeks. Conclusion Following the LITT procedure, serum NSE levels and peri-ablation $K(\text{trans})$ estimated from DCE-MRI demonstrated increases during the first two weeks after ablation, suggesting transiently increased BBB permeability.

Neurology

Fan B, Chopp M, Zhang Y, Wang X, Kemper A, Zhang ZG, and Liu XS. Ablation of Argonaute 2 in Schwann cells accelerates the progression of diabetic peripheral neuropathy. *Glia* 2023; Epub ahead of print. PMID: 37178056. [Full Text](#)

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Schwann cells (SCs) form myelin and provide metabolic support for axons, and are essential for normal nerve function. Identification of key molecules specific to SCs and nerve fibers may provide new therapeutic targets for diabetic peripheral neuropathy (DPN). Argonaute2 (Ago2) is a key molecular player that mediates the activity of miRNA-guided mRNA cleavage and miRNA stability. Our study found that Ago2 knockout (Ago2-KO) in proteolipid protein (PLP) lineage SCs in mice resulted in a significant reduction of nerve conduction velocities and impairments of thermal and mechanical sensitivities. Histopathological data revealed that Ago2-KO significantly induced demyelination and neurodegeneration. When DPN was induced in both wild-type and Ago2-KO mice, Ago2-KO mice exhibited further decreased myelin thickness and exacerbated neurological outcomes compared with wild-type mice. Deep sequencing analysis of Ago2 immunoprecipitated complexes showed that deregulated miR-206 in Ago2-KO mice is highly related to mitochondrial function. In vitro data showed that knockdown of miR-200 induced mitochondrial dysfunction and apoptosis in SCs. Together, our data suggest that Ago2 in SCs is essential to maintain peripheral nerve function while ablation of Ago2 in SCs exacerbates SC dysfunction and neuronal degeneration in DPN. These findings provide new insight into the molecular mechanisms of DPN.

Neurology

Kalaspudi L, **Williamson S**, Shipper A, Motta M, Esenwa C, Otite FO, Chaturvedi S, and Morris N. Scoping Review of Racial, Ethnic, and Sex Disparities in the Diagnosis and Management of Hemorrhagic Stroke. *Neurology* 2023; Epub ahead of print. PMID: 37202159. [Full Text](#)

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BACKGROUND AND OBJECTIVES: In the United States, Black, Hispanic, and Asian Americans suffer from excessively high incidence rates of hemorrhagic stroke compared to White Americans. Women suffer from higher rates of subarachnoid hemorrhage than men. Previous reviews detailing racial, ethnic, and sex disparities in stroke have focused on ischemic stroke. We performed a scoping review of disparities in the diagnosis and management of hemorrhagic stroke in the United States to identify areas of disparities, research gaps, and evidence to inform efforts aimed at health equity. **METHODS:** We included studies published after 2010 that assessed racial and ethnic or sex disparities in the diagnosis or management of patients 18 years or older in the United States with a primary diagnosis of spontaneous intracerebral hemorrhage or aneurysmal subarachnoid hemorrhage. We did not include studies assessing disparities in incidence, risks, or mortality and functional outcomes of hemorrhagic stroke. **RESULTS:** After reviewing 6161 abstracts and 441 full texts, 59 studies met our inclusion criteria. Four themes emerged. First, few data address disparities in acute hemorrhagic stroke. Second, racial and ethnic disparities in blood pressure control following intracerebral hemorrhage exist and likely contribute to disparities in recurrence rates. Third, racial and ethnic differences in end-of-life-care exist, but further work is required to understand whether these differences represent true disparities in care. Fourth, very

few studies specifically address sex disparities in hemorrhagic stroke care. **DISCUSSION:** Further efforts are necessary to delineate and correct racial, ethnic, and sex disparities in the diagnosis and management of hemorrhagic stroke.

Neurology

Martinez-Nunez AE, and LeWitt PA. Drugs to the Rescue: Comparison of On-Demand Therapies for OFF Symptoms in Parkinson's Disease. *J Parkinsons Dis* 2023; Epub ahead of print. PMID: 37182902.

[Full Text](#)

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Patients with Parkinson's disease often suffer from OFF symptoms disrupting their daily routines and adding to disabilities. Despite polypharmacy and adjustments to medication schedules, they often do not experience consistent relief from their motor symptoms. As the disease progresses, impaired gastric emptying may evolve, making it even more challenging for dopaminergic drugs to provide consistent results. This review focuses on a group of drugs that have the pharmacokinetic advantage of a much earlier onset of action by virtue of their non-oral routes of absorption. We compare the current marketed options: subcutaneous apomorphine, sublingual apomorphine, and inhaled levodopa. Subcutaneous apomorphine is the speediest to take effect, whereas sublingual apomorphine offers the longest clinical effect. Inhaled levodopa has the most favorable side effect profile among the three options. An inhaled form of apomorphine is currently under development, having passed safety and efficacy studies. Each of these drugs has unique characteristics for the user, including different side effect profiles and onset of action. The best choice for a patient will depend on individual needs and circumstances. In this review, we explore those nuances to allow clinicians to select the best option for their patients.

Neurology

Nematullah M, **Rashid F**, Nimker S, and Khan F. Protein Phosphatase 2A Regulates Phenotypic and Metabolic Alteration of Microglia Cells in HFD-Associated Vascular Dementia Mice via TNF- α /Arg-1 Axis. *Mol Neurobiol* 2023; 60(7):4049-4063. PMID: 37017907. [Full Text](#)

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Protein phosphatase 2A (PP2A), the activity of which is dictated by the composition of its regulatory subunit, is strongly related to the progression of neurodegenerative disease. The potential role of PP2A on the phenotypic transition of microglial cells under obese conditions is poorly explored. An understanding of the role of PP2A and identification of regulatory subunits contributing to microglial phenotypic transitions in obese condition may serve as a therapeutic target for obesity-associated neurodegeneration. C57BL/6 mice were exposed to obese-associated vascular dementia conditions by performing unilateral common carotid artery occlusion on obese mice of microglial polarization and PP2A activity using flow cytometry, real-time PCR, western blotting, and immunoprecipitation enzymatic assay, followed identifications of PP2A regulatory subunits using LCMS and RT-PCR. Chronic HFD feeding significantly increased the populations of infiltrated macrophages, showing a high percentage of CD86(+) in VaD mice, and the expression of pro-inflammatory cytokines, and we observed that PP2A modulates metabolic reprogramming of microglia by regulating OXPHOS/ECAR activity. Using Co-IP and LCMS, we identified the six specific regulatory subunits, namely PPP2R2A, PPP2R2D, PPP2R5B, PPP2R5C, PPP2R5D, and PPP2R5E, that are associated with microglial-activation during obesity-associated-VaD. Interestingly, pharmacological up-regulation of PP2A more significantly suppressed the expression of TNF-alpha than other pro-inflammatory-cytokines and increased the expression of Arginase-1, suggesting that PP2A modulates microglial-phenotypic transitions through TNF- α /Arg-1 axis. Our present findings

demonstrate microglial polarization in HFD associated with VaD, and point towards a therapeutic target by providing specific PP2A regulatory-subunits implicated in microglial activation during obesity-related-vascular-dementia.

Neurology

Zeidman LA. Intravenous immunoglobulin for immune-mediated small fiber neuropathy with TS-HDS and FGFR-3 antibodies: The jury is still out. *Muscle Nerve* 2023; Epub ahead of print. PMID: 37200471. [Full Text](#)

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Neurosurgery

Bartlett S, Nagaraja TN, Griffith B, Farmer KG, Van Harn M, Haider S, Hunt RJ, Cabral G, Knight RA, Valadie OG, Brown SL, Ewing JR, and Lee IY. Persistent Peri-Ablation Blood-Brain Barrier Opening After Laser Interstitial Thermal Therapy for Brain Tumors. *Cureus* 2023; 15(4):e37397. PMID: 37182017. [Full Text](#)

Neurosurgery, Wayne State University School of Medicine, Detroit, USA.
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Purpose Laser interstitial thermal therapy (LITT) is a minimally invasive, image-guided, cytoreductive procedure to treat recurrent glioblastoma. This study implemented dynamic contrast-enhanced magnetic resonance imaging (DCE-MRI) methods and employed a model selection paradigm to localize and quantify post-LITT blood-brain barrier (BBB) permeability in the ablation vicinity. Serum levels of neuron-specific enolase (NSE), a peripheral marker of increased BBB permeability, were measured. Methods Seventeen patients were enrolled in the study. Using an enzyme-linked immunosorbent assay, serum NSE was measured preoperatively, 24 hours postoperatively, and at two, eight, 12, and 16 weeks postoperatively, depending on postoperative adjuvant treatment. Of the 17 patients, four had longitudinal DCE-MRI data available, from which blood-to-brain forward volumetric transfer constant (K(trans)) data were assessed. Imaging was performed preoperatively, 24 hours postoperatively, and between two and eight weeks postoperatively. Results Serum NSE increased at 24 hours following ablation ($p=0.04$), peaked at two weeks, and returned to baseline by eight weeks postoperatively. K(trans) was found to be elevated in the peri-ablation periphery 24 hours after the procedure. This increase persisted for two weeks. Conclusion Following the LITT procedure, serum NSE levels and peri-ablation K(trans) estimated from DCE-MRI demonstrated increases during the first two weeks after ablation, suggesting transiently increased BBB permeability.

Neurosurgery

Dickerson DM, Mariano ER, Szokol JW, Harned M, Clark RM, Mueller JT, Shilling AM, Udoji MA, Mukkamala SB, Doan L, Wyatt KEK, **Schwalb JM**, Elkassabany NM, Eloy JD, Beck SL, Wiechmann L, Chiao F, Halle SG, Krishnan DG, Cramer JD, Ali Sakr Esa W, Muse IO, Baratta J, Rosenquist R, Guler P, Shah S, Kohan L, Robles J, Schwenk ES, Allen BFS, Yang S, Hadeed JG, Schwartz G, Englesbe MJ, Sprintz M, Urish KL, Walton A, Keith L, and Buvanendran A. Multiorganizational consensus to define guiding principles for perioperative pain management in patients with chronic pain, preoperative opioid tolerance, or substance use disorder. *Reg Anesth Pain Med* 2023; Epub ahead of print. PMID: 37185214. [Full Text](#)

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Significant knowledge gaps exist in the perioperative pain management of patients with a history of chronic pain, substance use disorder, and/or opioid tolerance as highlighted in the US Health and Human Services Pain Management Best Practices Inter-Agency Task Force 2019 report. The report emphasized the challenges of caring for these populations and the need for multidisciplinary care and a comprehensive approach. Such care requires stakeholder alignment across multiple specialties and care settings. With the intention of codifying this alignment into a reliable and efficient processes, a consortium of 15 professional healthcare societies was convened in a year-long modified Delphi consensus process and summit. This process produced seven guiding principles for the perioperative care of patients with chronic pain, substance use disorder, and/or preoperative opioid tolerance. These principles provide a framework and direction for future improvement in the optimization and care of 'complex' patients as they undergo surgical procedures.

Neurosurgery

Levin AM, She R, Chen Y, Adrianto I, Datta I, Loveless IM, Garman L, Montgomery CG, Li J, Iannuzzi M, and Rybicki BA. Identification of Environmental Exposures Associated with Risk of Sarcoidosis in African Americans. *Ann Am Thorac Soc* 2023; Epub ahead of print. PMID: 37209419. [Full Text](#)

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RATIONALE: Sarcoidosis is a racially disparate, granulomatous disease likely due to environmental exposures, genes, and their interactions. Despite increased risk in African Americans (AAs), few environmental risk factor studies in this susceptible population exist. **OBJECTIVES:** To identify environmental exposures associated with risk of sarcoidosis in AAs and those that differ in effect by self-identified race and genetic ancestry. **METHODS:** The study sample comprised 2,096 AAs (1,205 with and 891 without sarcoidosis), compiled from three component studies. Unsupervised clustering and multiple correspondence analyses were used to identify underlying clusters of environmental exposures. Mixed effects logistic regression was used to evaluate the association of these exposure clusters and the 51 single component exposures with risk of sarcoidosis. A comparison case-control sample of 762 European Americans (EAs, 388 with and 374 without sarcoidosis) was used to assess heterogeneity in exposure risk by race. **MEASUREMENT AND MAIN RESULTS:** Seven exposure clusters were identified, five of which were associated with risk. The exposure cluster with the strongest risk association was comprised of metals ($p < 0.001$), and within this cluster, exposure to aluminum had the highest risk (OR 3.30; 95%CI 2.23-4.09; $p < 0.001$). This effect also differed by race ($p < 0.001$), with EAs having no significant association with exposure (OR=0.86; 95% CI 0.56-1.33). Within AAs, increased risk was dependent upon genetic African ancestry ($p = 0.047$). **CONCLUSIONS:** Our findings support AAs having sarcoidosis environmental exposure risk profiles that differ from EAs. These differences may underlie racially disparate incidence rates, partially explained by genetic variation differing by African ancestry.

Obstetrics, Gynecology and Women's Health Services

Bahado-Singh R, Tarca AL, Hasbini YG, Sokol RJ, Keerthy M, Goyert G, Jones T, Thiel L, Green P, Youssef Y, Townsel C, Vengalil S, Paladino P, Wright A, Ayyash M, Vadlamud G, Szymanska M, Sajja S, Turkoglu O, Sterenberg G, Mangus AR, Baracy M, Gibbons M, Grace K, Houston K, Norman J, Gudicha DW, and Hassan SS. Maternal SARS-COV-2 infection and prematurity: the Southern Michigan COVID-19 collaborative. *J Matern Fetal Neonatal Med* 2023; 36(1):2199343. PMID: 37217448. [Full Text](#)

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OBJECTIVE: COVID-19 has been reported to increase the risk of prematurity, however, due to the frequent absence of unaffected controls as well as inadequate accounting for confounders in many studies, the question requires further investigation. We sought to determine the impact of COVID-19 disease on preterm birth (PTB) overall, as well as related subcategories such as early prematurity, spontaneous, medically indicated preterm birth, and preterm labor (PTL). We assessed the impact of confounders such as COVID-19 risk factors, a-priori risk factors for PTB, symptomatology, and disease severity on rates of prematurity. **METHODS:** This was a retrospective cohort study of pregnant women from March 2020 till October 1st, 2020. The study included patients from 14 obstetric centers in Michigan, USA. Cases were defined as women diagnosed with COVID-19 at any point during their pregnancy. Cases were matched with uninfected women who delivered in the same unit, within 30 d of the delivery of the index case. Outcomes of interest were frequencies of prematurity overall and subcategories of preterm birth (early, spontaneous/medically indicated, preterm labor, and premature preterm rupture of membranes) in cases compared to controls. The impact of modifiers of these outcomes was documented with extensive control for potential confounders. A p value <.05 was used to infer significance. **RESULTS:** The rate of prematurity was 8.9% in controls, 9.4% in asymptomatic cases, 26.5% in symptomatic COVID-19 cases, and 58.8% among cases admitted to the ICU. Gestational age at delivery was noted to decrease with disease severity. Cases were at an increased risk of prematurity overall [adjusted relative risk (aRR) = 1.62 (1.2-2.18)] and of early prematurity (<34 weeks) [aRR = 1.8 (1.02-3.16)] when compared to controls. Medically indicated prematurity related to preeclampsia [aRR = 2.46 (1.47-4.12)] or other indications [aRR = 2.32 (1.12-4.79)], were the primary drivers of overall prematurity risk. Symptomatic cases were at an increased risk of preterm labor [aRR = 1.74 (1.04-2.8)] and spontaneous preterm birth due to premature preterm rupture of membranes [aRR = 2.2(1.05-4.55)] when compared to controls and asymptomatic cases combined. The gestational age at delivery followed a dose-response relation with disease severity, as more severe cases tended to deliver earlier (Wilcoxon p < .05). **CONCLUSIONS:** COVID-19 is an independent risk factor for preterm birth. The increased preterm birth rate in COVID-19 was primarily driven by medically indicated delivery, with preeclampsia as the principal risk factor. Symptomatic status and disease severity were significant drivers of preterm birth.

Obstetrics, Gynecology and Women's Health Services

Briskin RS, and Luck AM. Effects of Pure Barre Exercise on Urinary Incontinence Symptoms: A Prospective Observational Cross-Sectional Study. *Urogynecology (Phila)* 2023; Epub ahead of print. PMID: 37195816. [Full Text](#)

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IMPORTANCE: Pure Barre is a form of physical exercise using low-impact, high-intensity, pulsatile isometric movements that may serve as a treatment option for urinary incontinence. **OBJECTIVE:** The objective of this study was to measure the effects of the Pure Barre workout on urinary incontinence symptoms and sexual function. **STUDY DESIGN:** This was a prospective observational study of new,

female Pure Barre clients with urinary incontinence. Eligible participants completed 3 validated questionnaires at baseline and at follow-up after 10 Pure Barre classes within 2 months. Questionnaires included the Michigan Incontinence Symptoms Index (M-ISI), the Pelvic Floor Distress Inventory-20, and the Female Sexual Function Index-6. Matched differences in domain questionnaire scores between baseline and follow-up were analyzed. **RESULTS:** All questionnaire domains significantly improved for all 25 participants after 10 Pure Barre classes. Median M-ISI severity domain scores decreased from 13 (interquartile range, 9-19) at baseline to 7 at follow-up (interquartile range, 3-10; $P < 0.0001$). Mean \pm SD M-ISI urgency urinary incontinence domain scores decreased from 6.40 ± 3.06 to 2.96 ± 2.13 ($P < 0.0001$). Mean \pm SD M-ISI stress urinary incontinence scores decreased from 5.24 ± 2.71 to 2.48 ± 1.58 ($P < 0.0001$). Mean \pm SD Urinary Distress Inventory domain scores decreased from 42.17 ± 17.15 to 29.67 ± 13.73 ($P < 0.0001$). Matched rank sum analysis indicated increasing Female Sexual Function Index-6 scores from baseline to follow-up ($P = 0.0022$). **CONCLUSION:** The Pure Barre workout may be an enjoyable, conservative management option that improves symptoms of urinary incontinence and sexual function.

Ophthalmology and Eye Care Services

Ramtohl P, Pellegrini M, Pichi F, Preziosa C, Marchese A, Cicinelli MV, Misericchi E, Munda R, Mrejen S, Rofagha S, Mein CE, Mein L, **Ober MD**, Cunha de Souza E, Cohen SY, van Dijk EHC, Jampol L, Boon CJF, and Freund KB. Stellate Multiform Amelanotic Choroidopathy (SMACH). Clinical and Multimodal Imaging Features. *Retina* 2023; Epub ahead of print. PMID: 37127025. [Full Text](#)

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PURPOSE: To describe the clinical and multimodal imaging features of stellate multiform amelanotic choroidopathy (SMACH; also known as serous maculopathy due to aspecific choroidopathy). **METHODS:** Retrospective observational case series of eyes presenting with SMACH. Multimodal imaging including fundus photography, optical coherence tomography (OCT), OCT-angiography (OCTA), and indocyanine green angiography (ICGA) was analyzed. **RESULTS:** Eighteen eyes from 18 patients (mean age: 28 ± 19 years) were included. The mean follow-up duration was 9 years. Ophthalmoscopy showed a yellowish-orange, dendriform choroidal lesion. At presentation, subretinal fluid (SRF) was seen in 10/18 cases (56%). Eight patients (44%) showed no evidence of SRF during a mean follow-up of 6 years. Cross-sectional OCT showed hyperreflective fibrous-like changes within the inner choroid with choriocapillaris flow preservation on OCTA. En face OCT showed a hyperreflective choroidal lesion with finger-like projections oriented in a stellate configuration. On ICGA, SMACH showed early and late hypofluorescence. None of the cases showed lesion growth. **CONCLUSIONS:** SMACH appears to be a unilateral choroidopathy characterized by distinctive multimodal imaging features. As SRF was absent in some cases, while a dendriform pattern was a consistent finding in all eyes, we propose renaming this entity "stellate multiform amelanotic choroidopathy", a name which retains its prior abbreviation "SMACH".

Orthopedics/Bone and Joint Center

Gaudiani MA, Castle JP, Pfennig MT, Jawanda HS, Meta F, and Lynch TS. Suture Anchor Fixation Has Less Gap Formation And No Difference In Complications Or Revisions For Patellar Tendon Repair: A Systematic Review. *Arthroscopy* 2023; Epub ahead of print. PMID: 37230184. [Full Text](#)

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PURPOSE: The purpose of this systematic review was to evaluate the literature on suture anchor usage for patellar tendon repair, summarize the overall biomechanical and clinical outcomes, and assess whether the cumulative research supports the adoption of this technique compared to trans-osseous repair. **METHODS:** A systematic literature review using the Preferred Reporting Items for Systematic and Meta-Analyses (PRISMA) guidelines was performed. Multiple electronic databases were searched to identify studies focusing on surgical outcomes of patellar tendon repair with suture anchor usage. Cadaver and animal biomechanical studies, technical studies, and clinical studies were included. **RESULTS:** A total of 29 studies met the inclusion criteria: 6 cadaver, 3 animal, 9 technical, and 11 clinical reports. Four of the 6 cadaver studies and one of the two animal studies found significantly less gap formation from suture anchor (SA) than from trans-osseous (TO) repair. Average gap formation in human studies ranged from 0.9-4.1mm in the SA group compared to 2.9-10.3mm in TO groups. Load to failure was significantly stronger in one of five cadaver studies and two of three animal studies, with human studies suture anchor load to failure ranging from 258-868N and trans-osseous load to failure ranging from 287-763N. There were 11 clinical studies that included 133 knees repaired using SA. Nine studies showed no difference between complication rate or risk for reoperation, where one study reported a significantly lower re-rupture rate after SA repair compared to trans-osseous repair. **CONCLUSION:** SA repair is a viable option for patellar tendon repair and could have several advantages over trans-osseous repair. Multiple studies indicate that SA repair has less gap formation during biomechanical testing compared to trans-osseous repair in human cadaver and animal models. No differences in complications or revisions were found in the majority of clinical studies.

Orthopedics/Bone and Joint Center

Neuman MD, Feng R, Giska M, Fidkowski C, Guthrie ST, Hakeos W, Hayes L, Hoegler J, Nowak K, et al. Pain, Analgesic Use, and Patient Satisfaction With Spinal Versus General Anesthesia for Hip Fracture Surgery. *Ann Intern Med* 2023; 176(1):952-960. PMID: Not assigned. [Full Text](#)

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Background: The REGAIN (Regional versus General Anesthesia for Promoting Independence after Hip Fracture) trial found similar ambulation and survival at 60 days with spinal versus general anesthesia for hip fracture surgery. Trial outcomes evaluating pain, prescription analgesic use, and patient satisfaction have not yet been reported. **Objective:** To compare pain, analgesic use, and satisfaction after hip fracture surgery with spinal versus general anesthesia. **Design:** Preplanned secondary analysis of a pragmatic randomized trial. (ClinicalTrials.gov: NCT02507505) **Setting:** 46 U.S. and Canadian hospitals. **Participants:** Patients aged 50 years or older undergoing hip fracture surgery. **Intervention:** Spinal or general anesthesia. **Measurements:** Pain on postoperative days 1 through 3; 60-, 180-, and 365-day pain and prescription analgesic use; and satisfaction with care. **Results:** A total of 1600 patients were enrolled. The average age was 78 years, and 77% were women. A total of 73.5% (1050 of 1428) of patients reported severe pain during the first 24 hours after surgery. Worst pain over the first 24 hours after surgery was greater with spinal anesthesia (rated from 0 [no pain] to 10 [worst pain imaginable]; mean difference, 0.40 [95% CI, 0.12 to 0.68]). Pain did not differ across groups at other time points. Prescription analgesic use at 60 days occurred in 25% (141 of 563) and 18.8% (108 of 574) of patients assigned to spinal and general anesthesia, respectively (relative risk, 1.33 [CI, 1.06 to 1.65]). Satisfaction was similar across groups. **Limitation:** Missing outcome data and multiple outcomes assessed. **Conclusion:** Severe pain is common after hip fracture. Spinal anesthesia was associated with more pain in the first 24 hours after surgery and more prescription analgesic use at 60 days compared with general anesthesia.

Otolaryngology – Head and Neck Surgery

Adjei Boakye E, Nair M, Aboueilella DK, Joseph CLM, Gerend MA, Subramaniam DS, and Osazuwa-Peters N. Trends in Reasons for Human Papillomavirus Vaccine Hesitancy: 2010-2020. *Pediatrics* 2023; Epub ahead of print. PMID: 37218460. [Full Text](#)

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OBJECTIVES: We sought to identify trends in the main reasons United States parents of unvaccinated children gave for not intending to vaccinate their adolescent children against HPV from 2010 to 2020. As interventions designed to increase vaccine uptake have been implemented across the United States, we predicted that reasons for hesitancy have changed over this period. **METHODS:** We analyzed data from the 2010 to 2020 National Immunization Survey-Teen, which included 119 695 adolescents aged 13 to 17 years. Joinpoint regression estimated yearly changes in the top five cited reasons for not intending to vaccinate using annual percentage changes. **RESULTS:** The five most frequently cited reasons for not intending to vaccinate included "not necessary," "safety concerns," "lack of recommendation," "lack of knowledge," and "not sexually active." Overall, parental HPV vaccine hesitancy decreased by 5.5% annually between 2010 and 2012 and then remained stable for the 9-year period of 2012 through 2020. The proportion of parents citing "safety or side effects" as a reason for vaccine hesitancy increased significantly by 15.6% annually from 2010 to 2018. The proportion of parents citing "not recommended," "lack of knowledge," or "child not sexually active" as reasons for vaccine hesitancy decreased significantly by 6.8%, 9.9%, and 5.9% respectively per year between 2013 and 2020. No significant changes were observed for parents citing "not necessary." **CONCLUSIONS:** Parents who cited vaccine safety as a reason for not intending to vaccinate their adolescent children against HPV increased over time. Findings support efforts to address parental safety concerns surrounding HPV vaccination.

Otolaryngology – Head and Neck Surgery

Craig JR, Dunn RT, Ray A, Keller CE, Peterson EL, and Eide JG. Cadaveric analysis of autonomic nerve fiber density in posterior nasal, posterolateral nasal, and anterior ethmoid nerves. *Int Forum Allergy Rhinol* 2023; Epub ahead of print. PMID: 37246483. [Full Text](#)

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Otolaryngology – Head and Neck Surgery

Craig JR, Kim M, Spielman DB, Overdevest J, Ghanem T, and Gudis DA. Nasoseptal Flap to Repair Large Maxillary Sinus Floor Defects. *Laryngoscope* 2023; Epub ahead of print. PMID: 37159108. [Full Text](#)

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This case highlights the successful use of a large nasoseptal flap to repair a large maxillary sinus floor defect. Surgeons can therefore rely on this flap for repairing maxillary sinus floor defects of most sizes and locations. *Laryngoscope*, 2023.

Otolaryngology – Head and Neck Surgery

Donaldson L, Wulu J, and **Garcia-Rodriguez L**. GENDER-AFFIRMATION SURGERY OF THE FACE FOR THE TRANSFEMININE PATIENT. *Facial Plast Surg* 2023; Epub ahead of print. PMID: 37196665.

[Request Article](#)

Otolaryngology, Henry Ford Health System, Detroit, United States.

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This paper discussed aspects of facial feminine affirmation surgery. We will briefly a short history of gender. We discuss anatomical differences in those born xy males versus xx females and will discuss subsequent procedures that aim at feminizing the face. The effects of silicone are also discussed as this was a trend in the past to feminize the face. Understandably so we discuss anatomical differences as being a fluid expression and differences based on ethnic background.

Otolaryngology – Head and Neck Surgery

Howell R, Johnson C, Allen J, Altaye M, Amin M, Bayan S, Belafsky P, Cervenka B, Desilva B, Dion GR, Ekbohm D, Friedman A, Fritz M, Giliberto JP, Guardiani E, Kasperbauer J, Kim B, Krekeler BN, Kuhn M, Kwak P, Ma Y, Madden LL, Matrka L, **Mayerhoff R**, McKeon M, **Piraka C**, Rosen CA, Tabangin M, Wahab SA, Wilson K, Wright C, Young VN, and Postma G. Surgical Outcomes in Zenker Diverticula: A Multicenter, Prospective, Longitudinal Study. *Laryngoscope* 2023; Epub ahead of print. PMID: 37191092.

[Full Text](#)

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OBJECTIVE: To compare improvement in patient-reported outcomes (PROM) in persons undergoing endoscopic and open surgical management of Zenker diverticula (ZD). **METHODOLOGY:** Prospective, multicenter cohort study of all individuals enrolled in the Prospective Outcomes of Cricopharyngeus Hypertonicity (POUCH) Collaborative who underwent surgery for ZD. Patient survey, radiography reports, and the 10-item Eating Assessment Tool (EAT-10) pre- and post-procedure were abstracted from a REDCap database, which summarized means, medians, percentages, and frequencies of. Outcome based on operative intervention (endoscopic vs. open) was compared using t-test, Wilcoxon rank sum test or chi-square test, as appropriate. **RESULTS:** One hundred and forty-seven persons were prospectively followed. The mean age (SD) of the cohort was 68.7 (11.0). Overall, 66% of patients reported 100% improvement in EAT-10; 81% of patients had greater than 75% improvement; and 88% had greater than 50% improvement. Endoscopic was used for n = 109 patients, and open surgical intervention was used for n = 38. The median [interquartile range, IQR] EAT-10 percent improvement for endoscopic treatment was 93.3% [72, 100], and open was 100% [92.3, 100] (p = 0.05). The incidence of intraoperative complications was 3.7% for endoscopic and 7.9% for open surgical management. The median [IQR] in follow-up was 86 and 97.5 days, respectively. **CONCLUSION:** Both endoscopic and open surgical management of ZD provide significant improvement in patient-reported outcomes. The data suggest that open diverticulectomy may provide a modest advantage in symptomatic improvement compared to endoscopic management. The data suggest that the postoperative complication rate is higher in the open surgical group. **LEVEL OF EVIDENCE:** Level 3 Laryngoscope, 2023.

Otolaryngology – Head and Neck Surgery

Jones L. editor note. *Facial Plast Surg* 2023; Epub ahead of print. PMID: 37216982. [Request Article](#)

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Otolaryngology – Head and Neck Surgery

Russell MD, Shonka DC, Jr., Noel J, Karcioğlu AS, Ahmed AH, Angelos P, Atkins K, Bischoff L, Buczek E, Caulley L, Freeman J, Kroeker T, Liddy W, McIver B, McMullen C, Nikiforov Y, Orloff L, Scharpf J, Shah J, Shaha A, **Singer M**, Tolley N, Tuttle RM, Witterick I, and Randolph GW. Preoperative Evaluation of Thyroid Cancer - a review of current best practices. *Endocr Pract* 2023; Epub ahead of print. PMID: 37236353. [Full Text](#)

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OBJECTIVE: Thyroid cancer incidence has increased significantly in recent decades. While most thyroid cancers are small and carry an excellent prognosis, a subset of patients present with advanced thyroid cancer which is associated with increased rates of morbidity and mortality. Management of thyroid cancer requires a thoughtful individualized approach in order to optimize oncologic outcomes and minimize morbidity associated with treatment. Since endocrinologists usually play a key role in the initial diagnosis and evaluation of thyroid cancers, a thorough understanding of the critical components of the preoperative evaluation facilitates the development of a timely and comprehensive management plan. The following review outlines considerations in the preoperative evaluation of patients with thyroid cancer. **METHODS:** A clinical review based on current literature was generated by a multidisciplinary author panel. **RESULTS:** A review of considerations in the preoperative evaluation of thyroid cancer is provided. Topic areas include initial clinical evaluation, imaging modalities, cytologic evaluation, and the evolving role of mutational testing. Special considerations in the management of advanced thyroid cancer are discussed. **CONCLUSIONS:** Thorough and thoughtful preoperative evaluation is critical to formulating an appropriate treatment strategy in the management of thyroid cancer.

Otolaryngology – Head and Neck Surgery

Saikia K, Alruwail FI, Wu V, Keller C, Chitale D, and Al-Obaidy KI. Adamantinoma-Like Ewing Sarcoma Mimicking Merkel Cell Carcinoma in the Parotid Gland: A Diagnostic Pitfall. *Int J Surg Pathol* 2023; Epub ahead of print. PMID: 37128815. [Full Text](#)

Department of Pathology and Laboratory Medicine, Henry Ford Health, Detroit, MI, USA.

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Adamantinoma-like Ewing sarcoma (ALES) is a newly described rare entity, which shows EWSR1::FLI1 rearrangement characteristic of Ewing sarcoma. This can be diagnostically challenging as it manifests histologically with epithelial differentiation and has diffuse keratin expression as well as p40 and p60 positivity. We hereby report a case of ALES in a 33-year-old woman with a past medical history of breast carcinoma who presented with a right-sided parotid mass. CT scan of the neck showed a heterogenous mass within the superficial lobe, measuring 17 mm in diameter for which the patient underwent superficial parotidectomy. Histopathology of the mass revealed a malignant neoplasm formed of solid nests, cords and sheets of cells with minimal cytoplasm and monomorphic nuclei with granular chromatin and indistinct nucleoli. Brisk mitotic activity and tumor necrosis were also present. The tumor showed strong and diffuse reactivity for pankeratin (clone AE1/AE3) and keratin 20, both in a dot-like pattern, raising the suspicion of metastatic Merkel cell carcinoma; however, molecular studies showed EWSR1::FLI1 rearrangement, supporting the diagnosis of ALES. In summary, it is prudent to have knowledge about this entity to avoid its misdiagnosis as other malignancies of the head and neck region which exhibit a different clinical course, prognosis and hence treatment modalities.

Otolaryngology – Head and Neck Surgery

Yassin-Kassab A, **Peterson EL**, and **Craig JR**. Total times to treatment completion and clinical outcomes in odontogenic sinusitis. *Am J Otolaryngol* 2023; 44(4):103921. PMID: 37187016. [Full Text](#)

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BACKGROUND: Multidisciplinary collaboration is essential for effective odontogenic sinusitis (ODS) management. One point of debate has been the optimal timing of primary dental treatment and endoscopic sinus surgery (ESS), but differences in time to completion of these treatment pathways have not been studied. **METHODS:** A retrospective cohort study was conducted on ODS patients from 2015 to 2022. Demographic and clinical variables were recorded, and various durations of time were analyzed from rhinologic consultation through treatment completion. Resolution of sinusitis symptoms and purulence on endoscopy was also recorded. **RESULTS:** Eighty-nine ODS patients were analyzed (47.2 % male, median 59 years-old). Of the 89 ODS patients, 56 had treatable dental pathology, and 33 had no treatable dental pathology. Median time to treatment completion for all patients was 103 days. Of 56 ODS patients with treatable dental pathology, 33 had primary dental treatment, and 27 (81 %) required secondary ESS. In patients who underwent primary dental treatment followed by ESS, median time from initial evaluation to treatment completion was 236.0 days. If ESS was pursued primarily followed by dental treatment, median time from initial evaluation to treatment completion was 112.0 days, which was significantly shorter than if dental treatment was pursued primarily ($p = 0.002$). Overall symptomatic and endoscopic resolution was 97.8 %. **CONCLUSIONS:** After dental and sinus surgical treatment, ODS patients experienced 97.8 % resolution of symptoms and purulence on endoscopy. In patients with ODS due to treatable dental pathology, primary ESS followed by dental treatment resulted in a shorter overall treatment duration than primary dental treatment followed by ESS.

Pathology and Laboratory Medicine

Fan B, **Chopp M**, **Zhang Y**, **Wang X**, **Kemper A**, **Zhang ZG**, and **Liu XS**. Ablation of Argonaute 2 in Schwann cells accelerates the progression of diabetic peripheral neuropathy. *Glia* 2023; Epub ahead of print. PMID: 37178056. [Full Text](#)

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Schwann cells (SCs) form myelin and provide metabolic support for axons, and are essential for normal nerve function. Identification of key molecules specific to SCs and nerve fibers may provide new therapeutic targets for diabetic peripheral neuropathy (DPN). Argonaute2 (Ago2) is a key molecular player that mediates the activity of miRNA-guided mRNA cleavage and miRNA stability. Our study found that Ago2 knockout (Ago2-KO) in proteolipid protein (PLP) lineage SCs in mice resulted in a significant reduction of nerve conduction velocities and impairments of thermal and mechanical sensitivities. Histopathological data revealed that Ago2-KO significantly induced demyelination and neurodegeneration. When DPN was induced in both wild-type and Ago2-KO mice, Ago2-KO mice exhibited further decreased myelin thickness and exacerbated neurological outcomes compared with wild-type mice. Deep sequencing analysis of Ago2 immunoprecipitated complexes showed that deregulated miR-206 in Ago2-KO mice is highly related to mitochondrial function. In vitro data showed that knockdown of miR-200 induced mitochondrial dysfunction and apoptosis in SCs. Together, our data suggest that Ago2 in SCs is essential to maintain peripheral nerve function while ablation of Ago2 in SCs exacerbates SC dysfunction and neuronal degeneration in DPN. These findings provide new insight into the molecular mechanisms of DPN.

Pathology and Laboratory Medicine

Gudipati S, Shallal A, Peterson E, Cook B, and Markowitz N. Increase in False Positive Fourth Generation HIV Tests in Patients with COVID-19 Disease. *Clin Infect Dis* 2023; Epub ahead of print. PMID: 37158382. [Full Text](#)

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BACKGROUND: We observed an increase in the frequency of false positive (FP) HIV test results correlating with SARS-CoV-2 prevalence, which led us to measure FP rates of a laboratory-based fourth generation HIV antigen/antibody test among those with polymerase-chain reaction (PCR)-confirmed infection with SARS-CoV-2 compared to the FP rate of those testing PCR-negative for SARS-CoV-2. **METHODS:** All those PCR tested for SARS-CoV-2 result within 2 weeks of a HIV fourth generation assay were selected. Positive HIV fourth generation assays were independently reviewed and divided into groups of FP, true positives (TP), and presumptive negatives (PN). Variables included age, race, ethnicity, gender, pregnancy, and COVID-19 immunization status. Associations with positive SARS-CoV-2 tests were assessed using linear logistic regression. A multivariate logistic regression was used to assess sets of variables. **RESULTS:** There were 31,910 medical records that met criteria. The frequency of SARS-CoV-2 positive tests was then calculated in groups of HIV TP, FP, and PN. In total, 31,575 patients had a PN HIV test result, 248 patients had a TP, and 87 patients had a FP. Those with HIV FP tests had the highest percentage of COVID-19 positive test results at 19.5%, which was significantly higher than HIV PN (11.3%; $p = 0.016$) and HIV TP (7.7%; $p = 0.002$). After adjustment for all covariates, only FP HIV was significantly associated with COVID-19 (odds ratio 4.22; $p = 0.001$). **CONCLUSIONS:** This study reveals those patients with positive SARS-CoV-2 PCR tests are significantly more likely to have a FP fourth generation HIV test than those with negative SARS-CoV-2 PCR tests.

Pathology and Laboratory Medicine

Saikia K, Alruwail FI, Wu V, Keller C, Chitale D, and Al-Obaidy KI. Adamantinoma-Like Ewing Sarcoma Mimicking Merkel Cell Carcinoma in the Parotid Gland: A Diagnostic Pitfall. *Int J Surg Pathol* 2023; Epub ahead of print. PMID: 37128815. [Full Text](#)

Department of Pathology and Laboratory Medicine, Henry Ford Health, Detroit, MI, USA.
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Adamantinoma-like Ewing sarcoma (ALES) is a newly described rare entity, which shows EWSR1::FLI1 rearrangement characteristic of Ewing sarcoma. This can be diagnostically challenging as it manifests histologically with epithelial differentiation and has diffuse keratin expression as well as p40 and p60 positivity. We hereby report a case of ALES in a 33-year-old woman with a past medical history of breast carcinoma who presented with a right-sided parotid mass. CT scan of the neck showed a heterogenous mass within the superficial lobe, measuring 17 mm in diameter for which the patient underwent superficial parotidectomy. Histopathology of the mass revealed a malignant neoplasm formed of solid nests, cords and sheets of cells with minimal cytoplasm and monomorphic nuclei with granular chromatin and indistinct nucleoli. Brisk mitotic activity and tumor necrosis were also present. The tumor showed strong and diffuse reactivity for pankeratin (clone AE1/AE3) and keratin 20, both in a dot-like pattern, raising the suspicion of metastatic Merkel cell carcinoma; however, molecular studies showed EWSR1::FLI1 rearrangement, supporting the diagnosis of ALES. In summary, it is prudent to have knowledge about this entity to avoid its misdiagnosis as other malignancies of the head and neck region which exhibit a different clinical course, prognosis and hence treatment modalities.

Pathology and Laboratory Medicine

Samuel L. Direct-from-Blood Detection of Pathogens: a Review of Technology and Challenges. *J Clin Microbiol* 2023; e0023121. Epub ahead of print. PMID: 37222587. [Request Article](#)

Division of Clinical Microbiology, Department of Pathology and Laboratory Medicine, Henry Ford Health, Detroit, Michigan, USA.

Blood cultures have been the staple of clinical microbiology laboratories for well over half a century, but gaps remain in our ability to identify the causative agent in patients presenting with signs and symptoms of sepsis. Molecular technologies have revolutionized the clinical microbiology laboratory in many areas but have yet to present a viable alternative to blood cultures. There has been a recent surge of interest in utilizing novel approaches to address this challenge. In this minireview, I discuss whether molecular tools will finally give us the answers we need and the practical challenges of incorporating them into the diagnostic algorithm.

Pediatrics

McKee KS, Tang X, Tung I, Wu G, Alshawabkeh AN, Arizaga JA, Bastain TM, Brennan PA, Breton CV, Camargo CA, Cioffi CC, Cordero JF, Dabelea D, Deutsch AR, Duarte CS, Dunlop AL, Elliott AJ, Ferrara A, Karagas MR, Lester B, McEvoy CT, Meeker J, Neiderhiser JM, Herbstman J, Trasande L, O'Connor TG, Hipwell AE, Comstock SS, Smith PB, Newby KL, Jacobson LP, Parker CB, Gershon R, Cella D, Aschner J, Teitelbaum SL, Stroustrup A, Merhar S, Lampland A, Reynolds A, Hudak M, Pryhuber G, Moore P, Washburn L, Mansbach J, Spergel J, Stevenson M, Bauer C, Deoni S, Canino G, Croen L, Gern J, **Zoratti E**, Seroogy C, Bendixsen C, Bacharier L, Kattan M, Wood R, Rivera-Spoljaric K, Hartert T, Singh A, **Johnson C**, Gilliland F, Farzan S, Karr C, Mason A, Sathyanarayana S, Carter B, Marsit C, Pastyrnak S, Neal C, Smith L, Helderma J, Leve L, Ganiban J, Tepper R, Simhan H, **Barone C**, Kerver J, Paneth N, McKane P, Schantz S, Woodruff T, Stanford J, Wright R, Bosquet-Enlow M, Huddleston K, Bush N, Nguyen R, and Barrett E. Perinatal Outcomes During vs. Prior to the COVID-19 Pandemic and the Role of Maternal Depression and Perceived Stress: A Report from the ECHO Program. *Am J Perinatol* 2023. PMID: Not assigned. [Request Article](#)

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Objective: We sought to evaluate the impact of the COVID-19 pandemic on perinatal outcomes while accounting for maternal depression or perceived stress and to describe COVID-specific stressors, including changes in prenatal care, across specific time periods of the pandemic. Study Design: Data dyads from 41 cohorts from the National Institutes of Health Environmental influences on Child Health Outcomes Program (N=2983) were used to compare birth outcomes before and during the pandemic (n=2355), and a partially overlapping sample (n=1490) responded to a COVID-19 questionnaire. Psychosocial stress was defined using prenatal screening for depression and perceived stress. Propensity-score matching and general estimating equations with robust variance estimation were used to estimate the pandemic's effect on birth outcomes. Results: Symptoms of depression and perceived stress during pregnancy were similar prior to and during the pandemic, with nearly 40% of participants reporting mild to severe stress, and 24% reporting mild depression to severe depression. Gestations were shorter during the pandemic (B=-0.33 weeks, p=0.025), and depression was significantly associated with shortened gestation (B=-0.02 weeks, p=0.015) after adjustment. Birth weights were similar (B=-28.14 g, p=0.568), but infants born during the pandemic had slightly larger birth weights for gestational age at delivery than those born before the pandemic (B=0.15 z-score units, p=0.041). More women who gave birth early in the pandemic reported being moderately or extremely distressed about changes to their prenatal care and delivery (45%) compared with those who delivered later in the pandemic. A majority (72%) reported somewhat to extremely negative views of COVID-19 on their life. Conclusions: In this national cohort, we detected no effect of COVID-19 on prenatal depression or perceived stress. However, experiencing the COVID-19 pandemic in pregnancy was associated with decreases in gestational age at birth as well as distress about changes in prenatal care early in the pandemic.

Pharmacy

Ho TA, Patterson KM, Gadgeel SM, Kenney RM, and Veve MP. Cancer is chronic but antimicrobial stewardship is iconic: A retrospective cohort of optimal antibiotic use in ambulatory oncology clinics. *Antimicrob Steward Healthc Epidemiol* 2023; 3(1):e81. PMID: 37179765. [Full Text](#)

Department of Pharmacy, Henry Ford Hospital, Detroit, Michigan.
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Division of Hematology and Oncology, Department of Internal Medicine, Henry Ford Hospital, Detroit, Michigan.
Department of Pharmacy Practice, Eugene Applebaum College of Pharmacy and Health Sciences, Wayne State University, Detroit, Michigan.

OBJECTIVE: To evaluate antibiotic prescribing in ambulatory oncology clinics and to identify opportunities to improve antibiotic use. **METHODS:** Retrospective cohort of adult patients who received care at 4 ambulatory oncology clinics from May 2021 to December 2021. Patients were included if they actively followed with a hematologist-oncologist for a cancer diagnosis and received an antibiotic prescription for uncomplicated upper respiratory tract infection (URTI), lower respiratory tract infection (LRTI), urinary tract infection (UTI), or acute bacterial skin-skin structure infection (ABSSSI) at an oncology clinic. The primary outcome was receipt of optimal antibiotic therapy, defined as a composite of drug, dose, and duration according to local and national guidelines. Patient characteristics were described and compared; predictors of optimal antibiotic use were identified using multivariable logistic regression. **RESULTS:** In total, 200 patients were included in this study: 72 (36%) received optimal antibiotics and 128 (64%) received suboptimal antibiotics. The proportions of patients receiving optimal therapy by indication were ABSSSI (52%), UTI (35%), URTI (27%), and LRTI (15%). The most common suboptimal prescribing components were dose (54%), selection (53%) and duration (23%). After adjusting for female sex and LRTI, ABSSSI (adjusted odds ratio, 2.28; 95% confidence interval, 1.19-4.37) was associated with optimal antibiotic therapy. Antibiotic-associated adverse drug events occurred in 7 patients; 6 occurred patients who received prolonged durations and 1 occurred in a patient who received an optimal duration ($P = .057$). **CONCLUSIONS:** Suboptimal antibiotic prescribing in ambulatory oncology clinics is common and mostly driven by antibiotic selection and dosing. Duration of therapy may also be an area for improvement as national oncology guidelines have not adopted short-course therapy.

Pharmacy

Khan N, Almajed MR, Fitzmaurice MG, and Jafri SM. Developments in pharmacotherapeutic agents for hepatitis B - how close are we to a functional cure? *Expert Opin Pharmacother* 2023; 24(9):1001-1011. PMID: 37163255. [Request Article](#)

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INTRODUCTION: Hepatitis B virus (HBV) remains a public health concern given its global prevalence and potential complications including hepatocellular carcinoma (HCC). Current therapies, including nucleos(t)ide analogs (NA) and interferons (IFN), are effective in chronic treatment of HBV but rarely provide a functional cure due to inadequate host response and the presence of viral DNA. Therefore, novel therapies that enhance the innate immune response while suppressing DNA transcription may provide definitive treatment of HBV. **AREAS COVERED:** In this review, the authors provide a brief overview of commonly used agents and their efficacy in treatment of HBV. Newer therapies with direct antiviral agents such as bepirovirsen (antisense oligonucleotide (ASO)) and entry inhibitors such as bulevirtide have shown efficacy in reducing viral load but demonstrate further reductions in conjunction with immune modulators such as therapeutic vaccines. **EXPERT OPINION:** Combination therapy is far superior to monotherapy alone, necessitating the need for both immunomodulators and direct antiviral agents in chronic treatment of HBV. Therapies that target covalently closed circular (cccDNA) with immunomodulators like therapeutic vaccines have shown promising results and may ultimately achieve functional cure. However, therapies need to be evaluated in the context of the patient, considering both financial and socioeconomic factors.

Pharmacy

Kunz Coyne AJ, **Herbin S**, Caniff K, and Rybak MJ. Steno-sphere: Navigating the Enigmatic World of Emerging Multidrug-Resistant *Stenotrophomonas maltophilia*. *Pharmacotherapy* 2023; Epub ahead of print. PMID: 37199104. [Full Text](#)

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Stenotrophomonas maltophilia is an opportunistic pathogen and frequent cause of serious nosocomial infections. Patient populations at greatest risk for these infections include the immunocompromised and those with chronic respiratory illnesses and prior antibiotic exposure, notably to carbapenems. Its complex virulence and resistance profile drastically limit available antibiotics, and incomplete breakpoint and pharmacokinetic/pharmacodynamic (PK/PD) data to inform dose optimization further complicates therapeutic approaches. Clinical comparison data of first-line agents, including trimethoprim-sulfamethoxazole (TMP-SMX), quinolones, and minocycline, are limited to conflicting observational data with no clear benefit of a single agent or combination therapy. Newer antibiotic approaches, including cefiderocol and aztreonam-avibactam, are promising alternatives for extensively drug-resistant isolates; however, clinical outcomes data are needed. The potential clinical utility of bacteriophage for compassionate use in treating *S. maltophilia* infections remains to be determined since data is limited to in-vitro and sparse in-vivo work. This article provides a review of available literature for *S. maltophilia* infection management focused on related epidemiology, resistance mechanisms, identification, susceptibility testing, antimicrobial PK/PD, and emerging therapeutic strategies.

Pharmacy

Manojlovich M, Rizvi-Toner A, **DasGupta R**, Farris K, Friese C, **Kostoff D**, Mackler E, **Millisor V**, and Titler MG. Video reflexive ethnography as an intervention to improve oral anti-cancer agent patient education: A pilot study. *PEC Innov* 2023; 2:100148. PMID: 37214518. [Full Text](#)

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OBJECTIVE: Oral anticancer agents (OAAs) are associated with side effects that interfere with medication adherence, despite patient education regarding side effect management. Video reflexive ethnography (VRE) captures care processes on video that allow participants to learn from videos. The purpose of this pilot study was to assess the usefulness and impact of VRE on improving OAA education. **METHODS:** This qualitative study was conducted in a pharmacist-managed OAA clinic: two pharmacists and four patients participated. We filmed each pharmacist providing education to two patients. We conducted patient interviews and one reflexivity session with both pharmacists to learn participants' perspectives. We used thematic content analysis to analyze data. **RESULTS:** Two themes emerged: what patients liked/helped, and things that were unclear. Patients liked instructions on temperature taking, directions to safely handle and store OAAs. Unclear areas included knowing the timing of the worst side effects. During the reflexivity session, pharmacists found patients' comments useful to improve their practice. **CONCLUSION:** VRE was acceptable to pharmacists and patients. Pharmacists recognized VRE as a helpful technique to improve patient education on OAAs. **INNOVATION:** The use of video enables participants to scrutinize and reshape their practices, making VRE a powerful innovation and adjunct to quality improvement initiatives.

Plastic Surgery

Tabayo E, Saucedo JM, Srinivasan RC, Shah AR, **Karamanos E**, Rockwood J, and Rodriguez-Merchan EC. Bridge plating in the setting of radiocarpal instability: Does distal fixation to the second or third metacarpal matter? A cadaveric study. *World J Orthop* 2023; 14(4):207-217. PMID: 37155513. [Full Text](#)

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BACKGROUND: Radiocarpal dislocations are rare but potentially devastating injuries. Poorer outcomes are associated with inadequate or lost reduction, such as ulnar translocation, but no consensus exists on the ideal fixation technique. Dorsal bridge plate fixation has been described for various settings in the treatment of complex distal radius fractures and can be fixed distally to the second or third metacarpal, but its application for radiocarpal dislocations has not been established. **AIM:** To determine whether distal fixation to the second or third metacarpal matters. **METHODS:** Using a cadaveric radiocarpal dislocation model, the effect of distal fixation was studied in two stages: (1) A pilot study that investigated the effect of distal fixation alone; and (2) a more refined study that investigated the effect of described techniques for distal and proximal fixation. Radiographs were measured in various parameters to determine the quality of the reduction achieved. **RESULTS:** The pilot study found that focusing on distal fixation alone without changing proximal fixation results in ulnar translocation and volar subluxation when fixing distally to the second metacarpal compared with the third. The second iteration demonstrated that anatomic alignment in coronal and sagittal planes could be achieved with each technique. **CONCLUSION:** In a cadaveric radiocarpal dislocation model, anatomic alignment can be maintained with bridge plate fixation to the second metacarpal or the third metacarpal if the described technique is followed. When considering dorsal bridge plate fixation for radiocarpal dislocations, the surgeon is encouraged to understand the nuances of different fixation techniques and how implant design features may influence proximal placement.

Public Health Sciences

Adjei Boakye E, Nair M, Aboueilla DK, Joseph CLM, Gerend MA, Subramaniam DS, and Osazuwa-Peters N. Trends in Reasons for Human Papillomavirus Vaccine Hesitancy: 2010-2020. *Pediatrics* 2023; Epub ahead of print. PMID: 37218460. [Full Text](#)

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OBJECTIVES: We sought to identify trends in the main reasons United States parents of unvaccinated children gave for not intending to vaccinate their adolescent children against HPV from 2010 to 2020. As interventions designed to increase vaccine uptake have been implemented across the United States, we predicted that reasons for hesitancy have changed over this period. **METHODS:** We analyzed data from the 2010 to 2020 National Immunization Survey-Teen, which included 119 695 adolescents aged 13 to 17 years. Joinpoint regression estimated yearly changes in the top five cited reasons for not intending to vaccinate using annual percentage changes. **RESULTS:** The five most frequently cited reasons for not intending to vaccinate included "not necessary," "safety concerns," "lack of recommendation," "lack of knowledge," and "not sexually active." Overall, parental HPV vaccine hesitancy decreased by 5.5% annually between 2010 and 2012 and then remained stable for the 9-year period of 2012 through 2020. The proportion of parents citing "safety or side effects" as a reason for vaccine hesitancy increased

significantly by 15.6% annually from 2010 to 2018. The proportion of parents citing "not recommended," "lack of knowledge," or "child not sexually active" as reasons for vaccine hesitancy decreased significantly by 6.8%, 9.9%, and 5.9% respectively per year between 2013 and 2020. No significant changes were observed for parents citing "not necessary." CONCLUSIONS: Parents who cited vaccine safety as a reason for not intending to vaccinate their adolescent children against HPV increased over time. Findings support efforts to address parental safety concerns surrounding HPV vaccination.

Public Health Sciences

Anchan RM, Spies JB, Zhang S, Wojdyla D, Bortoletto P, Terry K, Disler E, Milne A, Gargiulo A, Petrozza J, Brook O, Srouji S, Morton CC, Greenberg J, **Wegienka G**, Stewart EA, Nicholson WK, Thomas L, Venable S, Laughlin-Tommaso S, Diamond MP, Maxwell GL, Marsh EE, Myers ER, Vines AI, Wise LA, Wallace K, and Jacoby VL. Long Term Health-Related Quality of Life and Symptom Severity Following Hysterectomy, Myomectomy, or Uterine Artery Embolization for the Treatment of Symptomatic Uterine Fibroids. *Am J Obstet Gynecol* 2023; Epub ahead of print. PMID: 37244458. [Full Text](#)

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BACKGROUND: Few studies have directly compared different surgical procedures for uterine fibroids with respect to long-term health-related quality of life outcomes and symptom improvement. OBJECTIVE: We examined differences in change from baseline to 1, 2 or 3-year follow-up in health-related quality of life and symptom severity among patients who underwent abdominal myomectomy, laparoscopic or robotic myomectomy, abdominal hysterectomy, laparoscopic or robotic hysterectomy, or uterine artery embolization. STUDY DESIGN: The COMPARE-UF Registry is a multi-institutional prospective observational cohort study of women undergoing treatment for uterine fibroids. A subset of 1,384 women

ages 31-45 years who underwent either abdominal myomectomy (n=237), laparoscopic myomectomy (n=272), abdominal hysterectomy (n=177), laparoscopic hysterectomy (n=522), or uterine artery embolization (n=176) were included in this analysis. We obtained demographics, fibroid history, and symptoms by questionnaires at enrollment and at 1-, 2-, and 3-years post-treatment. We used the Uterine Fibroids Symptom and Quality of Life (UFS-QoL) questionnaire to ascertain symptom severity and health-related quality of life scores among participants. To account for potential baseline differences across treatment groups, a propensity score model was used to derive overlap weights and compare total HR-QoL and symptom severity (SS) scores post-enrollment with a repeated measures model. For this HRQOL tool, a specific minimal clinically important difference (MCID) has not been determined, but based on previous research, a difference of 10 points was considered a reasonable estimate of MCID. Use of this difference was agreed upon by the Steering Committee at the time the analysis was planned.

RESULTS: At baseline, women undergoing hysterectomy and uterine artery embolization reported the lowest health-related quality of life scores and highest symptom severity scores compared to those undergoing abdominal myomectomy or laparoscopic myomectomy ($p < 0.001$). Those undergoing hysterectomy and uterine artery embolization reported the longest duration of fibroid symptoms with a mean of 6.3 years (SD: 6.7, $p < 0.001$). The most common fibroid symptoms were menorrhagia (75.3%), bulk symptoms (74.2%), and bloating (73.2%). More than half (54.9%) of participants reported anemia, and 9.4% women reported a history of blood transfusion. Across all modalities, total health-related quality of life and symptom severity score markedly improved from baseline to 1-year with the largest improvement in the laparoscopic hysterectomy group (UFS-QoL: delta= (+) 49.2; symptom severity: delta= (-)51.3). Those undergoing abdominal myomectomy, laparoscopic myomectomy, and uterine artery embolization also demonstrated significant improvement in health-related quality of life (delta= (+)43.9, (+)32.9, (+)40.7, respectively) and symptom severity (delta= (-)41.4, (-) 31.5, (-) 38.5, respectively) at 1 year, and the improvement persisted from baseline for uterine sparing procedures during 2(nd) (UFS-QOL: delta= (+)40.7, (+)37.4, (+)39.3 SS: delta= (-) 38.5, (-) 32.0, (-) 37.7 and 3(rd) year (UFS-QOL: delta= (+) 40.9, (+)39.9, (+)41.1 and SS: delta= (-) 33.9, (-)36.5, (-) 33.0, respectively), post-treatment intervals, however with a trend towards decline in degree of improvement from years 1 and 2. Differences from baseline were greatest for hysterectomy; however, this may reflect the relative importance of bleeding in the UFS-QoL, rather than clinically meaningful symptom recurrence among women undergoing uterus-sparing treatments.

CONCLUSION: All treatment modalities were associated with significant improvement in health-related quality of life and symptom severity reduction 1-year post-treatment. However, abdominal myomectomy, laparoscopic myomectomy and uterine artery embolization indicated an a gradual decline in symptom improvement and health-related quality of life by 3(rd) year post-procedure.

Public Health Sciences

Carroll NM, Burnett-Hartman AN, Rendle KA, **Neslund-Dudas CM**, Greenlee RT, Honda SA, Vachani A, and Ritzwoller DP. Smoking status and the association between patient-level factors and survival among lung cancer patients. *J Natl Cancer Inst* 2023; Epub ahead of print. PMID: 37228018. [Full Text](#)

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BACKGROUND: Declines in the prevalence of cigarette smoking, advances in targeted therapies, and implementation of lung cancer screening have changed the clinical landscape for lung cancer. An increasing proportion of lung cancer deaths are in those who have never smoked cigarettes. To better understand contemporary patterns in survival among patients with lung cancer, a comprehensive evaluation of factors associated with survival, including differential associations by smoking status, is needed. **METHODS:** Patients diagnosed with lung cancer between 1/1/2010 and 9/30/2019 were identified. We estimated all-cause and lung cancer-specific median, 5-year, and multivariable restricted

mean survival time (RMST) to identify demographic, socioeconomic, and clinical factors associated with survival, overall and stratified by smoking status (never, former, and current). RESULTS: Analyses included 6,813 patients with lung cancer: 13.9% never smoked, 54.2% formerly smoked, and 31.9% currently smoked. All-cause RMST through 5-years for those who never, formerly, and currently smoked was 32.1, 25.9, and 23.3 months, respectively. Lung cancer specific RMST was 36.3, 30.3, and 26.0, respectively. Across most models, female sex, younger age, higher SES, first course surgery, histology, and BMI were positively associated, and higher stage was inversely associated with survival. Relative to White patients, Black patients had increased survival among those who formerly smoked. CONCLUSION: We identify actionable factors associated with survival between those who never, formerly, and currently smoked cigarettes. These findings illuminate opportunities to address underlying mechanisms driving lung cancer progression, including use of first-course treatment, and enhanced implementation of tailored smoking cessation interventions for individuals diagnosed with cancer.

Public Health Sciences

Challapalli SD, Shetty KR, Bui Q, Osazuwa-Peters N, and **Adjei Boakye E**. Sun protective behaviors among adolescents and young adults in the United States. *J Natl Med Assoc* 2023; Epub ahead of print. PMID: 37142483. [Full Text](#)

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PURPOSE: We described sun protective behaviors in adolescents and young adults (AYA) compared to older adults. METHODS: We used data from the 2013-2018 National Health and Nutrition Examination Survey, a nationally representative samples of the civilian, noninstitutionalized US population (10,710 respondents aged between 20 and 59 and without a history of skin cancer diagnoses). The primary exposure for the study was age group: aged 20-39 defined as AYA and aged 40-59 as adults. The outcome variable was sun protective behaviors: stay in the shade, wear a long-sleeved shirt, use sunscreen, at least one of the three; and all three measures. Multivariable logistic regression models were used to assess association between age group and sun protective behaviors adjusting for sociodemographic factors. RESULTS: Overall, 51.3% of respondents were AYA, 76.1% reported staying in the shade, 50.9% using sunscreen, 33.3% wearing long-sleeved clothes, 88.1% engaging in one of the three behaviors, and 17.1% engaging in all three behaviors. In the adjusted models, the odds of engaging in all three behaviors among AYAs was 28% (aOR: 0.72, 95% CI: 0.62-0.83) lower than adult respondents. Compared to adults, AYAs were 22% less likely to wear long sleeved clothes (aOR: 0.78, 95% CI: 0.70-0.87). There were no significant differences in the odds of engaging in at least one sun protective behavior, using sunscreen, and staying in the shade between AYAs and adults. CONCLUSIONS: More targeted interventions need to be implemented to decrease the risk of skin cancer in the AYA population.

Public Health Sciences

Craig JR, Dunn RT, Ray A, Keller CE, Peterson EL, and Eide JG. Cadaveric analysis of autonomic nerve fiber density in posterior nasal, posterolateral nasal, and anterior ethmoid nerves. *Int Forum Allergy Rhinol* 2023; Epub ahead of print. PMID: 37246483. [Full Text](#)

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Public Health Sciences

Debbs J, Hannawi B, Peterson E, Gui H, Zeld N, Luzum JA, Sabbah HN, Snider J, Pinto YM, Williams LK, and Lanfear DE. Evaluation of a New Aptamer-Based Array for Soluble Suppressor of Tumorigenicity (ST2) and N-terminal Pro-B-Type Natriuretic Peptide (NTproBNP) in Heart Failure Patients. *J Cardiovasc Transl Res* 2023; Epub ahead of print. PMID: 37191882. [Full Text](#)

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BACKGROUND: Recent advances in multi-marker platforms offer faster data generation, but the fidelity of these methods compared to the ELISA is not established. We tested the correlation and predictive performance of SOMAscan vs. ELISA methods for NTproBNP and ST2. **METHODS:** Patients ≥ 18 years with heart failure and ejection fraction $< 50\%$ were enrolled. We tested the correlation between SOMA and ELISA for each biomarker and their association with outcomes. **RESULTS:** There was good correlation of SOMA vs. ELISA for ST2 ($\rho = 0.71$) and excellent correlation for NTproBNP ($\rho = 0.94$). The two versions of both markers were not significantly different regarding survival association. The two ST2 assays and NTproBNP assays were similarly associated with all-cause mortality and cardiovascular mortality. These associations remained statistically significant when adjusted for MAGGIC risk score (all $p < 0.05$). **CONCLUSION:** SOMAscan quantifications of ST2 and NTproBNP correlate to ELISA versions and carry similar prognosis.

Public Health Sciences

Dimitrion P, Hamzavi I, Yin C, Toor J, Subedi K, Khalasawi N, Miller A, Huggins R, Adrianto I, Veenstra J, Vellaichamy G, Hans A, Daveluy S, Athar M, Liao W, Lim H, Ozog D, Zhou L, and Mi QS.

Mass cytometry uncovers a distinct peripheral immune profile and upregulated CD38 expression in patients with hidradenitis suppurativa. *Cell Mol Immunol* 2023; Epub ahead of print. PMID: 37248290.

[Request Article](#)

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Public Health Sciences

Katon JG, **Bossick AS**, Tartaglione EV, Enquobahrie DA, Haeger KO, Johnson AM, Ma EW, Savitz D, Shaw JG, Todd-Stenberg J, Yano EM, Washington DL, and Christy AY. Assessing Racial Disparities in Access, Use, and Outcomes for Pregnant and Postpartum Veterans and Their Infants in Veterans Health Administration. *J Womens Health (Larchmt)* 2023; Epub ahead of print. PMID: 37186805. [Full Text](#)

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Objective: Limited population-based data examines racial disparities among pregnant and postpartum veterans. Our objective was to determine whether Black/white racial disparities in health care access, use, and veteran and infant outcomes are present among pregnant and postpartum veterans and their infants using Veterans Health Administration (VA) care. Methods: The VA National Veteran Pregnancy and Maternity Care Survey included all veterans with a VA paid live birth between June 2018 and December 2019. Participants could complete the survey online or by telephone. The independent variable was self-reported race. Outcomes included timely initiation of prenatal care, perceived access to timely prenatal care, attendance at a postpartum check-up, receipt of needed mental health care, cesarean section, postpartum rehospitalization, low birthweight, preterm birth, admission to a neonatal intensive care unit, and breastfeeding. Nonresponse weighted general linear models with a log-link were used to examine associations of race with outcomes. Cox regression was used to examine the association of race with duration of breastfeeding. Models adjusted for age, ethnicity, urban versus rural residence, and parity. Results: The analytic sample consisted of 1,220 veterans (Black n = 916; white n = 304) representing 3,439 weighted responses (Black n = 1,027; white n = 2,412). No racial disparities were detected for health care access or use. Black veterans were more likely than white veterans to have a postpartum rehospitalization (RR 1.67, 95% CI: 1.04-2.68) and a low-birthweight infant (RR 1.67, 95% CI: 1.20-2.33). Conclusion: While no racial disparities were detected for health care access and use, we identified disparities in postpartum rehospitalization and low birthweight, underscoring that access is not sufficient for ensuring health equity.

Public Health Sciences

Khatib SA, Adil K, Schultz L, Gadgeel S, Popoff A, Ajlouni M, Simoff M, Movsas B, and Feldman A. Clinical Outcome in Patients With Early-Stage Small Cell Lung Cancer Treated With Surgery or Radiation in the Absence of Prophylactic Cranial Irradiation: A Single-Center Retrospective Study. *Adv Radiat Oncol* 2023; 8(4):101190. PMID: 37152487. [Full Text](#)

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PURPOSE: As screening chest computed tomography for patients at high risk for cancer has become more widely accepted, increasing numbers of patients with early-stage small cell lung cancer (SCLC) are being diagnosed. Although surgery is an accepted option for patients with early-stage SCLC, for patients who decline or cannot undergo surgery, stereotactic body radiation treatment (SBRT) is an alternative. Although prophylactic cranial irradiation (PCI) improves survival in patients with limited-stage SCLC, PCI for early-stage SCLC (stage T1-T2) has not been explored. This study defines survival and recurrence patterns in patients with early-stage SCLC who were treated with surgery or SBRT in the absence of PCI. **METHODS AND MATERIALS:** In this single-institution retrospective study, 14 patients diagnosed with early-stage SCLC (stage T1-T2) between July 2015 and May 2021 at a single tertiary care hospital were treated with SBRT or surgery with no PCI. Primary outcomes were locoregional cancer recurrence, distant recurrence, recurrence-free survival, and overall survival. The secondary outcome was development of brain metastasis. Analyses included Cox regression, Kaplan-Meier survival, and log-rank tests. **RESULTS:** A total of 14 patients (5 women and 9 men) were included in the study: 9 with stage T1 and 5 with stage T2 SCLC. Six patients (43%) received SBRT and 8 (57%) had surgical treatment. All patients except 1 received adjuvant chemotherapy. Median follow-up was 14.3 months (range, 2.4-64.4 months), and the median age at diagnosis was 71.5 years (range, 54-81 years). Cox regression and log-rank tests showed no significant differences in any outcomes between the surgery and SBRT groups, and no patients developed brain metastases during the study period. **CONCLUSIONS:** Data are lacking regarding the benefit of PCI in early-stage SCLC. Although the sample size in this study was too small to draw any conclusions, the findings add to the ongoing dialogue regarding the importance of PCI in this patient population. No difference was identified in survival and cancer recurrence in patients who received either surgery or SBRT in the absence of PCI.

Public Health Sciences

Levin AM, She R, Chen Y, Adrianto I, Datta I, Loveless IM, Garman L, Montgomery CG, Li J, Iannuzzi M, and Rybicki BA. Identification of Environmental Exposures Associated with Risk of Sarcoidosis in African Americans. *Ann Am Thorac Soc* 2023; Epub ahead of print. PMID: 37209419. [Full Text](#)

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RATIONALE: Sarcoidosis is a racially disparate, granulomatous disease likely due to environmental exposures, genes, and their interactions. Despite increased risk in African Americans (AAs), few environmental risk factor studies in this susceptible population exist. **OBJECTIVES:** To identify environmental exposures associated with risk of sarcoidosis in AAs and those that differ in effect by self-identified race and genetic ancestry. **METHODS:** The study sample comprised 2,096 AAs (1,205 with and 891 without sarcoidosis), compiled from three component studies. Unsupervised clustering and multiple correspondence analyses were used to identify underlying clusters of environmental exposures. Mixed effects logistic regression was used to evaluate the association of these exposure clusters and the 51 single component exposures with risk of sarcoidosis. A comparison case-control sample of 762 European Americans (EAs, 388 with and 374 without sarcoidosis) was used to assess heterogeneity in exposure risk by race. **MEASUREMENT AND MAIN RESULTS:** Seven exposure clusters were identified, five of which were associated with risk. The exposure cluster with the strongest risk association was comprised of metals ($p < 0.001$), and within this cluster, exposure to aluminum had the highest risk (OR 3.30; 95%CI 2.23-4.09; $p < 0.001$). This effect also differed by race ($p < 0.001$), with EAs having no significant association with exposure (OR=0.86; 95% CI 0.56-1.33). Within AAs, increased risk was dependent upon genetic African ancestry ($p = 0.047$). **CONCLUSIONS:** Our findings support AAs having sarcoidosis

environmental exposure risk profiles that differ from EAs. These differences may underlie racially disparate incidence rates, partially explained by genetic variation differing by African ancestry.

Public Health Sciences

McKee KS, Tang X, Tung I, Wu G, Alshawabkeh AN, Arizaga JA, Bastain TM, Brennan PA, Breton CV, Camargo CA, Cioffi CC, Cordero JF, Dabelea D, Deutsch AR, Duarte CS, Dunlop AL, Elliott AJ, Ferrara A, Karagas MR, Lester B, McEvoy CT, Meeker J, Neiderhiser JM, Herbstman J, Trasande L, O'Connor TG, Hipwell AE, Comstock SS, Smith PB, Newby KL, Jacobson LP, Parker CB, Gershon R, Cella D, Aschner J, Teitelbaum SL, Stroustrup A, Merhar S, Lampland A, Reynolds A, Hudak M, Pryhuber G, Moore P, Washburn L, Mansbach J, Spergel J, Stevenson M, Bauer C, Deoni S, Canino G, Croen L, Gern J, **Zoratti E**, Seroogy C, Bendixsen C, Bacharier L, Kattan M, Wood R, Rivera-Spoljaric K, Hartert T, Singh A, **Johnson C**, Gilliland F, Farzan S, Karr C, Mason A, Sathyanarayana S, Carter B, Marsit C, Pastyrnak S, Neal C, Smith L, Helderman J, Leve L, Ganiban J, Tepper R, Simhan H, **Barone C**, Kerver J, Paneth N, McKane P, Schantz S, Woodruff T, Stanford J, Wright R, Bosquet-Enlow M, Huddleston K, Bush N, Nguyen R, and Barrett E. Perinatal Outcomes During vs. Prior to the COVID-19 Pandemic and the Role of Maternal Depression and Perceived Stress: A Report from the ECHO Program. *Am J Perinatol* 2023. PMID: Not assigned. [Request Article](#)

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Objective: We sought to evaluate the impact of the COVID-19 pandemic on perinatal outcomes while accounting for maternal depression or perceived stress and to describe COVID-specific stressors, including changes in prenatal care, across specific time periods of the pandemic. Study Design: Data dyads from 41 cohorts from the National Institutes of Health Environmental influences on Child Health Outcomes Program (N=2983) were used to compare birth outcomes before and during the pandemic (n=2355), and a partially overlapping sample (n=1490) responded to a COVID-19 questionnaire. Psychosocial stress was defined using prenatal screening for depression and perceived stress. Propensity-score matching and general estimating equations with robust variance estimation were used to estimate the pandemic's effect on birth outcomes. Results: Symptoms of depression and perceived stress during pregnancy were similar prior to and during the pandemic, with nearly 40% of participants reporting mild to severe stress, and 24% reporting mild depression to severe depression. Gestations were shorter during the pandemic (B=-0.33 weeks, p=0.025), and depression was significantly associated with shortened gestation (B=-0.02 weeks, p=0.015) after adjustment. Birth weights were similar (B=-28.14 g, p=0.568), but infants born during the pandemic had slightly larger birth weights for gestational age at delivery than those born before the pandemic (B=0.15 z-score units, p=0.041). More women who gave birth early in the pandemic reported being moderately or extremely distressed about changes to their prenatal care and delivery (45%) compared with those who delivered later in the pandemic. A majority (72%) reported somewhat to extremely negative views of COVID-19 on their life. Conclusions: In this national cohort, we detected no effect of COVID-19 on prenatal depression or perceived stress. However, experiencing the COVID-19 pandemic in pregnancy was associated with decreases in gestational age at birth as well as distress about changes in prenatal care early in the pandemic.

Public Health Sciences

Shipp GM, Weatherspoon LJ, Comstock SS, **Alexander GL**, Gardiner JC, and Kerver JM. Understanding the Impact of Perceived Social Support for Breastfeeding Among African American Women: Results From the Mama Bear Feasibility Trial. *Am J Health Promot* 2023; 37(4):534-537. PMID: 36330772. [Full Text](#)

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PURPOSE: Perceived Social Support (PSS) can impact breastfeeding behaviors, and a lack of PSS potentially contributes to disparities in breastfeeding rates for African American women (AA). Objectives were to describe PSS at two timepoints and test associations between PSS and breastfeeding intensity for AA. METHODS: Data are from a feasibility trial of breastfeeding support among AA. The Hughes Breastfeeding Support Scale was used to measure PSS (Emotional, Informational, Tangible; total range =

30-120) in pregnancy (T1, n = 32) and early postpartum (T2, n = 31). Scale means were compared with t-tests. Associations between PSS at T1 and breastfeeding intensity (ie, quantitative measure of breastfeeding) were assessed with linear regression. RESULTS: Total PSS (mean \pm SE) was high at both time points (T1 = 90.5 \pm 4.8; T2 = 92.8 \pm 3.1). At T2, older participants or those living with a partner had higher total PSS scores compared to those younger or living alone. Emotional PSS was significantly higher at T2 than T1 with no differences in tangible or informational PSS over time. Mixed-feeding, exclusive breastfeeding, and exclusive formula feeding was distributed at 39%, 32%, and 29%, respectively. Total PSS was not associated with breastfeeding intensity. CONCLUSION: Women reported high levels of social support, and emotional PSS increased over time in this small sample of AA. PSS and sources of PSS are understudied, especially among AA, and future studies should explore quantitative methods to assess PSS. The results of such assessments can then be used to design breastfeeding support interventions.

Public Health Sciences

Straughen JK, Kozyrskyj AL, and **Cassidy-Bushrow AE**. Editorial: Allergic diseases and neurodevelopment. *Front Pediatr* 2023; 11:1199467. PMID: 37152318. [Full Text](#)

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Public Health Sciences

Wesselink AK, **Wegienka G**, Coleman CM, Geller RJ, Harmon QE, Upson K, Lovett SM, Claus Henn B, Marsh EE, Noel NL, Baird DD, and Wise LA. A Prospective Ultrasound Study of Cigarette Smoking and Uterine Leiomyomata Incidence and Growth. *Am J Obstet Gynecol* 2023; Epub ahead of print. PMID: 37148957. [Full Text](#)

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BACKGROUND: Uterine leiomyomata (UL; fibroids) are common benign neoplasms that contribute substantially to gynecologic morbidity. Some existing epidemiologic studies indicate that cigarette smoking is associated with lower UL risk. However, no prospective studies have systematically screened an entire study population for UL using transvaginal ultrasound or evaluated the association of cigarette smoking with UL growth. OBJECTIVE: We examined the association between cigarette smoking and UL incidence and growth in a prospective ultrasound study. STUDY DESIGN: We enrolled 1,693 residents of the Detroit metropolitan area into the Study of Environment, Lifestyle, and Fibroids during 2010-2012. Eligible participants were ages 23-34 years, had an intact uterus but no prior diagnosis of UL, and self-identified as Black or African American. We invited participants to complete a baseline visit and four follow-up visits over approximately 10 years. At each visit, we used transvaginal ultrasound to assess UL incidence and growth. Participants provided extensive self-reported data throughout follow-up including exposures to active and passive cigarette smoking in adulthood. We excluded participants who did not return for any follow-up visits (n=76; 4%). We fit Cox proportional hazards regression models to estimate hazard ratios (HRs) and 95% confidence intervals (CIs) for the association of time-varying smoking

history with incidence rates of UL. We fit linear mixed models to estimate the percentage difference and 95% CI for the association of smoking history with UL growth. We adjusted for socio-demographic, lifestyle, and reproductive factors. We interpreted our results based on magnitude and precision, rather than binary significance testing. RESULTS: Among 1,252 participants without ultrasound evidence of UL at baseline, UL were detected in 394 participants (31%) during follow-up. Current cigarette smoking was associated with a lower UL incidence rate (HR=0.67, 95% CI: 0.49-0.92). Associations were stronger among participants who had smoked for longer durations (≥ 15 years vs. never: HR=0.49, 95% CI: 0.25-0.95). The HR for former smokers was 0.78 (95% CI: 0.50-1.20). Among never smokers, the HR for current passive smoke exposure was 0.84 (95% CI: 0.65-1.07). UL growth was not appreciably associated with current (percent difference= -3%, 95% CI: -13%, 8%) or former (percent difference= -9%, 95% CI: -22%, 6%) smoking. CONCLUSION: We provide the first evidence from a prospective ultrasound study that cigarette smoking is associated with lower UL incidence.

Public Health Sciences

Xiong Y, Kullberg S, Garman L, Pezant N, Ellinghaus D, Vasila V, Eklund A, **Rybicki BA**, Iannuzzi MC, Schreiber S, Müller-Quernheim J, Montgomery CG, Grunewald J, Padyukov L, and Rivera NV. Sex differences in the genetics of sarcoidosis across European and African ancestry populations. *Front Med (Lausanne)* 2023; 10:1132799. PMID: 37250650. [Full Text](#)

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BACKGROUND: Sex differences in the susceptibility of sarcoidosis are unknown. The study aims to identify sex-dependent genetic variations in two clinical sarcoidosis phenotypes: Löfgren's syndrome (LS) and non-Löfgren's syndrome (non-LS). METHODS: A meta-analysis of genome-wide association studies was conducted on Europeans and African Americans, totaling 10,103 individuals from three population-based cohorts, Sweden (n = 3,843), Germany (n = 3,342), and the United States (n = 2,918), followed by an SNP lookup in the UK Biobank (UKB, n = 387,945). A genome-wide association study based on ImmunoChip data consisting of 141,000 single nucleotide polymorphisms (SNPs) was conducted in the sex groups. The association test was based on logistic regression using the additive model in LS and non-LS sex groups independently. Additionally, gene-based analysis, gene expression, expression quantitative trait loci (eQTL) mapping, and pathway analysis were performed to discover functionally relevant mechanisms related to sarcoidosis and biological sex. RESULTS: We identified sex-dependent genetic variations in LS and non-LS sex groups. Genetic findings in LS sex groups were explicitly located in the extended Major Histocompatibility Complex (xMHC). In non-LS, genetic differences in the sex groups were primarily located in the MHC class II subregion and ANXA11. Gene-based analysis and eQTL enrichment revealed distinct sex-specific gene expression patterns in various tissues and immune cell types. In LS sex groups, a pathway map related to antigen presentation machinery by IFN-gamma. In non-LS, pathway maps related to immune response lectin-induced complement pathway in males and related to maturation and migration of dendritic cells in skin sensitization in females were identified. CONCLUSION: Our findings provide new evidence for a sex bias underlying sarcoidosis genetic architecture, particularly in clinical phenotypes LS and non-LS. Biological sex likely plays a role in disease mechanisms in sarcoidosis.

Public Health Sciences

Yassin-Kassab A, **Peterson EL**, and **Craig JR**. Total times to treatment completion and clinical outcomes in odontogenic sinusitis. *Am J Otolaryngol* 2023; 44(4):103921. PMID: 37187016. [Full Text](#)

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BACKGROUND: Multidisciplinary collaboration is essential for effective odontogenic sinusitis (ODS) management. One point of debate has been the optimal timing of primary dental treatment and endoscopic sinus surgery (ESS), but differences in time to completion of these treatment pathways have not been studied. **METHODS:** A retrospective cohort study was conducted on ODS patients from 2015 to 2022. Demographic and clinical variables were recorded, and various durations of time were analyzed from rhinologic consultation through treatment completion. Resolution of sinusitis symptoms and purulence on endoscopy was also recorded. **RESULTS:** Eighty-nine ODS patients were analyzed (47.2 % male, median 59 years-old). Of the 89 ODS patients, 56 had treatable dental pathology, and 33 had no treatable dental pathology. Median time to treatment completion for all patients was 103 days. Of 56 ODS patients with treatable dental pathology, 33 had primary dental treatment, and 27 (81 %) required secondary ESS. In patients who underwent primary dental treatment followed by ESS, median time from initial evaluation to treatment completion was 236.0 days. If ESS was pursued primarily followed by dental treatment, median time from initial evaluation to treatment completion was 112.0 days, which was significantly shorter than if dental treatment was pursued primarily ($p = 0.002$). Overall symptomatic and endoscopic resolution was 97.8 %. **CONCLUSIONS:** After dental and sinus surgical treatment, ODS patients experienced 97.8 % resolution of symptoms and purulence on endoscopy. In patients with ODS due to treatable dental pathology, primary ESS followed by dental treatment resulted in a shorter overall treatment duration than primary dental treatment followed by ESS.

Pulmonary and Critical Care Medicine

Geletu A, Emole J, Abu Sayf A, Hinojosa OA, and **Gastesi A**. A Case of Right Ventricular Failure Secondary to Acute Chest Syndrome Managed With Early Red Cell Exchange Transfusion. *Cureus* 2023; 15(4):e37729. PMID: 37214046. [Full Text](#)

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Patients with sickle cell disease are at risk of vaso-occlusive crises including acute chest syndrome (ACS) and pulmonary hypertension. ACS is a life-threatening complication of sickle cell disease and is associated with increased morbidity and mortality. It is known that pulmonary pressures increase during episodes of acute chest syndrome and may lead to acute right ventricular failure leading to increased morbidity and mortality. Given the paucity of randomized controlled trials, the management of ACS and pulmonary hypertension in the setting of a sickle cell crisis largely relies on expert opinion. We present a case of acute chest syndrome complicated by acute right ventricular failure that was managed with prompt red cell exchange transfusion with favorable clinical outcomes.

Pulmonary and Critical Care Medicine

Khatib SA, Adil K, Schultz L, Gadgeel S, Popoff A, Ajlouni M, Simoff M, Movsas B, and **Feldman A**. Clinical Outcome in Patients With Early-Stage Small Cell Lung Cancer Treated With Surgery or Radiation in the Absence of Prophylactic Cranial Irradiation: A Single-Center Retrospective Study. *Adv Radiat Oncol* 2023; 8(4):101190. PMID: 37152487. [Full Text](#)

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PURPOSE: As screening chest computed tomography for patients at high risk for cancer has become more widely accepted, increasing numbers of patients with early-stage small cell lung cancer (SCLC) are being diagnosed. Although surgery is an accepted option for patients with early-stage SCLC, for patients who decline or cannot undergo surgery, stereotactic body radiation treatment (SBRT) is an alternative. Although prophylactic cranial irradiation (PCI) improves survival in patients with limited-stage SCLC, PCI for early-stage SCLC (stage T1-T2) has not been explored. This study defines survival and recurrence patterns in patients with early-stage SCLC who were treated with surgery or SBRT in the absence of PCI. **METHODS AND MATERIALS:** In this single-institution retrospective study, 14 patients diagnosed with early-stage SCLC (stage T1-T2) between July 2015 and May 2021 at a single tertiary care hospital were treated with SBRT or surgery with no PCI. Primary outcomes were locoregional cancer recurrence, distant recurrence, recurrence-free survival, and overall survival. The secondary outcome was development of brain metastasis. Analyses included Cox regression, Kaplan-Meier survival, and log-rank tests. **RESULTS:** A total of 14 patients (5 women and 9 men) were included in the study: 9 with stage T1 and 5 with stage T2 SCLC. Six patients (43%) received SBRT and 8 (57%) had surgical treatment. All patients except 1 received adjuvant chemotherapy. Median follow-up was 14.3 months (range, 2.4-64.4 months), and the median age at diagnosis was 71.5 years (range, 54-81 years). Cox regression and log-rank tests showed no significant differences in any outcomes between the surgery and SBRT groups, and no patients developed brain metastases during the study period. **CONCLUSIONS:** Data are lacking regarding the benefit of PCI in early-stage SCLC. Although the sample size in this study was too small to draw any conclusions, the findings add to the ongoing dialogue regarding the importance of PCI in this patient population. No difference was identified in survival and cancer recurrence in patients who received either surgery or SBRT in the absence of PCI.

Radiation Oncology

Bartlett S, Nagaraja TN, Griffith B, Farmer KG, Van Harn M, Haider S, Hunt RJ, Cabral G, Knight RA, Valadie OG, Brown SL, Ewing JR, and Lee IY. Persistent Peri-Ablation Blood-Brain Barrier Opening After Laser Interstitial Thermal Therapy for Brain Tumors. *Cureus* 2023; 15(4):e37397. PMID: 37182017. [Full Text](#)

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Purpose Laser interstitial thermal therapy (LITT) is a minimally invasive, image-guided, cytoreductive procedure to treat recurrent glioblastoma. This study implemented dynamic contrast-enhanced magnetic resonance imaging (DCE-MRI) methods and employed a model selection paradigm to localize and quantify post-LITT blood-brain barrier (BBB) permeability in the ablation vicinity. Serum levels of neuron-specific enolase (NSE), a peripheral marker of increased BBB permeability, were measured. Methods Seventeen patients were enrolled in the study. Using an enzyme-linked immunosorbent assay, serum NSE was measured preoperatively, 24 hours postoperatively, and at two, eight, 12, and 16 weeks postoperatively, depending on postoperative adjuvant treatment. Of the 17 patients, four had longitudinal DCE-MRI data available, from which blood-to-brain forward volumetric transfer constant (K(trans)) data were assessed. Imaging was performed preoperatively, 24 hours postoperatively, and between two and eight weeks postoperatively. Results Serum NSE increased at 24 hours following ablation (p=0.04), peaked at two weeks, and returned to baseline by eight weeks postoperatively. K(trans) was found to be elevated in the peri-ablation periphery 24 hours after the procedure. This increase persisted for two

weeks. Conclusion Following the LITT procedure, serum NSE levels and peri-ablation K(trans) estimated from DCE-MRI demonstrated increases during the first two weeks after ablation, suggesting transiently increased BBB permeability.

Radiation Oncology

Chun SG, Rimmer A, Amini A, Chang JY, Donington J, Edelman MJ, Geng Y, Gubens MA, Higgins KA, Iyengar P, **Movsas B**, Ning MS, Park HS, Rodrigues G, Wolf A, and Simone CB, 2nd. American Radium Society Appropriate Use Criteria for Radiation Therapy in the Multidisciplinary Management of Thymic Carcinoma. *JAMA Oncol* 2023; Epub ahead of print. PMID: 37186595. [Full Text](#)

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Fox Chase Comprehensive Cancer Center, Philadelphia, Pennsylvania.

Helen Diller Family Comprehensive Cancer Center, University of California San Francisco.

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Henry Ford Cancer Institute, Detroit, Michigan.

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Mount Sinai Health System, New York, New York.

New York Proton Center, New York, New York.

IMPORTANCE: Thymic carcinoma is rare, and its oncologic management is controversial due to a paucity of prospective data. For this reason, multidisciplinary consensus guidelines are crucial to guide oncologic management. **OBJECTIVE:** To develop expert multidisciplinary consensus guidelines on the management of common presentations of thymic carcinoma. **EVIDENCE REVIEW:** Case variants spanning the spectrum of stage I to IV thymic carcinoma were developed by the 15-member multidisciplinary American Radium Society (ARS) Thoracic Appropriate Use Criteria (AUC) expert panel to address management controversies. A comprehensive review of the English-language medical literature from 1980 to 2021 was performed to inform consensus guidelines. Variants and procedures were evaluated by the panel using modified Delphi methodology. Agreement/consensus was defined as less than or equal to 3 rating points from median. Consensus recommendations were then approved by the ARS Executive Committee and subject to public comment per established ARS procedures. **FINDINGS:** The ARS Thoracic AUC panel identified 89 relevant references and obtained consensus for all procedures evaluated for thymic carcinoma. Minimally invasive thymectomy was rated as usually inappropriate (regardless of stage) due to the infiltrative nature of thymic carcinomas. There was consensus that conventionally fractionated radiation (1.8-2 Gy daily) to a dose of 45 to 60 Gy adjuvantly and 60 to 66 Gy in the definitive setting is appropriate and that elective nodal irradiation is inappropriate. For radiation technique, the panel recommended use of intensity-modulated radiation therapy or proton therapy (rather than 3-dimensional conformal radiotherapy) to reduce radiation exposure to the heart and lungs. **CONCLUSIONS AND RELEVANCE:** The ARS Thoracic AUC panel has developed multidisciplinary consensus guidelines for various presentations of thymic carcinoma, perhaps the most well referenced on the topic.

Radiation Oncology

Khatib SA, Adil K, Schultz L, Gadgeel S, Popoff A, Ajlouni M, Simoff M, Movsas B, and Feldman A. Clinical Outcome in Patients With Early-Stage Small Cell Lung Cancer Treated With Surgery or Radiation in the Absence of Prophylactic Cranial Irradiation: A Single-Center Retrospective Study. *Adv Radiat Oncol* 2023; 8(4):101190. PMID: 37152487. [Full Text](#)

Department of Radiation Oncology, Henry Ford Cancer Institute, Detroit, Michigan.

Department of Public Health Sciences, Henry Ford Health, Detroit, Michigan.

Departments of Medical Oncology.

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PURPOSE: As screening chest computed tomography for patients at high risk for cancer has become more widely accepted, increasing numbers of patients with early-stage small cell lung cancer (SCLC) are being diagnosed. Although surgery is an accepted option for patients with early-stage SCLC, for patients who decline or cannot undergo surgery, stereotactic body radiation treatment (SBRT) is an alternative. Although prophylactic cranial irradiation (PCI) improves survival in patients with limited-stage SCLC, PCI for early-stage SCLC (stage T1-T2) has not been explored. This study defines survival and recurrence patterns in patients with early-stage SCLC who were treated with surgery or SBRT in the absence of PCI. **METHODS AND MATERIALS:** In this single-institution retrospective study, 14 patients diagnosed with early-stage SCLC (stage T1-T2) between July 2015 and May 2021 at a single tertiary care hospital were treated with SBRT or surgery with no PCI. Primary outcomes were locoregional cancer recurrence, distant recurrence, recurrence-free survival, and overall survival. The secondary outcome was development of brain metastasis. Analyses included Cox regression, Kaplan-Meier survival, and log-rank tests. **RESULTS:** A total of 14 patients (5 women and 9 men) were included in the study: 9 with stage T1 and 5 with stage T2 SCLC. Six patients (43%) received SBRT and 8 (57%) had surgical treatment. All patients except 1 received adjuvant chemotherapy. Median follow-up was 14.3 months (range, 2.4-64.4 months), and the median age at diagnosis was 71.5 years (range, 54-81 years). Cox regression and log-rank tests showed no significant differences in any outcomes between the surgery and SBRT groups, and no patients developed brain metastases during the study period. **CONCLUSIONS:** Data are lacking regarding the benefit of PCI in early-stage SCLC. Although the sample size in this study was too small to draw any conclusions, the findings add to the ongoing dialogue regarding the importance of PCI in this patient population. No difference was identified in survival and cancer recurrence in patients who received either surgery or SBRT in the absence of PCI.

Radiation Oncology

Parikh PJ, Lee P, Low DA, **Kim J**, Mittauer KE, Bassetti MF, Glide-Hurst CK, Raldow AC, Yang Y, Portelance L, Padgett KR, Zaki B, Zhang R, Kim H, Henke LE, Price AT, Mancias JD, Williams CL, Ng J, Pennell R, Pfeffer MR, Levin D, Mueller AC, Mooney KE, Kelly P, Shah AP, Boldrini L, Placidi L, Fuss M, and Chuong MD. A Multi-Institutional Phase II Trial of Ablative 5-Fraction Stereotactic MR-Guided On-Table Adaptive Radiation Therapy for Borderline Resectable and Locally Advanced Pancreatic Cancer. *Int J Radiat Oncol Biol Phys* 2023; Epub ahead of print. PMID: 37210048. [Full Text](#)

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Assuta Medical Center, Tel Aviv, IL.

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Orlando Health Cancer Institute, Orlando, FL.

Department of Radiology, Radiation Oncology and Hematology, Fondazione Policlinico Universitario "A. Gemelli" IRCCS, Rome, Italy.

ViewRay, Inc., Denver, CO.

PURPOSE: Magnetic resonance (MR) image guidance may facilitate safe ultra-hypofractionated radiation dose escalation for inoperable pancreatic ductal adenocarcinoma. We conducted a prospective study

evaluating the safety of 5-fraction Stereotactic MR-guided on-table Adaptive Radiation Therapy (SMART) for locally advanced (LAPC) and borderline resectable pancreatic cancer (BRPC). **METHODS:** LAPC/BRPC patients were eligible for this multi-institutional single arm phase 2 trial after ≥ 3 months of systemic therapy without evidence of distant progression. 50 Gy in 5 fractions was prescribed on a 0.35 Tesla MR-guided radiation delivery system. The primary endpoint was acute grade ≥ 3 gastrointestinal (GI) toxicity definitely attributed to SMART. **RESULTS:** 136 patients (LAPC 56.6%, BRPC 43.4%) were enrolled between January 2019 and January 2022. Mean age was 65.7 (36-85) years. Head of pancreas lesions were most common (66.9%). Induction chemotherapy mostly consisted of (modified)FOLFIRINOX (65.4%) or gemcitabine/nab-paclitaxel (16.9%). Mean CA19-9 after induction chemotherapy and prior to SMART was 71.7 U/mL (0-468). On-table adaptive replanning was performed for 93.1% of all delivered fractions. Median follow-up from diagnosis and SMART was 16.4 months and 8.8 months, respectively. The incidence of acute grade ≥ 3 GI toxicity possibly or probably attributed to SMART was 8.8%, including two postoperative deaths that were possibly related to SMART in patients who had surgery. There was no acute grade ≥ 3 GI toxicity definitely related to SMART. 1-year overall survival from SMART was 65.0%. **CONCLUSIONS:** The primary endpoint of this study was met with no acute grade ≥ 3 GI toxicity definitely attributed to ablative 5-fraction SMART. While it is unclear whether SMART contributed to postoperative toxicity, we recommend caution when pursuing surgery especially with vascular resection after SMART. Additional follow-up is ongoing to evaluate late toxicity, quality of life, and long-term efficacy.

Radiation Oncology

Raldow AC, Siker ML, Bonner JA, Chen Y, Liu FF, Metz JM, **Movsas B**, Potters L, Schultz CJ, Wilson E, Wang X, Romero T, Steinberg ML, and Jagsi R. Assessment of Differences in Academic Rank and Compensation by Gender and Race/Ethnicity Among Academic Radiation Oncologists in the United States. *Adv Radiat Oncol* 2023; 8(5):101210. PMID: 37152892. [Full Text](#)

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Department of Radiation Oncology, University of Rochester, Rochester, New York.

Radiation Medicine Program, Princess Margaret Cancer Centre, University Health Network, Toronto, Ontario, Canada.

Department of Radiation Oncology, University of Pennsylvania, Philadelphia, Pennsylvania.

Department of Radiation Oncology, Henry Ford Cancer Institute, Detroit, Michigan.

Department of Radiation Oncology, Northwell Health, Lake Success, New York.

American Society for Radiation Oncology, Arlington, Virginia.

Department of Medicine, University of California, Los Angeles, California.

Department of Radiation Oncology, Emory University, Atlanta, Georgia.

PURPOSE: Advancing equity, diversity, and inclusion in the physician workforce is essential to providing high-quality and culturally responsive patient care and has been shown to improve patient outcomes. To better characterize equity in the field of radiation oncology, we sought to describe the current academic radiation oncology workforce, including any contemporary differences in compensation and rank by gender and race/ethnicity. **METHODS AND MATERIALS:** We conducted a retrospective cohort study using data from the Society of Chairs of Academic Radiation Oncology Programs (SCAROP) 2018 Financial Survey. Multivariable logistic regression models were used to identify factors associated with associate or full professor rank. Compensation was compared by gender and race/ethnicity overall and stratified by rank and was further analyzed using multivariable linear regression models. **RESULTS:** Of the 858 academic radiation oncologists from 63 departments in the United States in the sample, 33.2% were female, 65.2% were White, 27.2% were Asian, and 7.6% were underrepresented in medicine (URiM). There were 44.0% assistant professors, 32.0% associate professors, and 22.8% full professors. Multivariable logistic regression analysis for factors associated with associate or full professor rank did not reveal statistically significant associations between gender or race/ethnicity with academic rank (odds ratio [OR], 0.86; 95% confidence interval [CI], 0.56-1.32; P = .48 for gender; OR, 0.81; 95% CI, 0.5-1.30;

P = .37 for Asian vs White; and OR, 0.69; 95% CI, 0.31-1.55; P = .37 for URiM vs White), but CIs were wide due to sample size, and point estimates were <1. Similarly, multivariable linear regression analysis modeling the log relative total compensation did not detect statistically significant differences between radiation oncologists by gender (-1.7%; 95% CI, -6.8% to 3.4%; P = .51 for female vs male) or race/ethnicity (-1.6%; 95% CI, -7.3% to 4.0%; P = .57 for Asian vs White and -3.0%; 95% CI, -12.1% to 6.0%; P = .51 for URiM vs White). CONCLUSIONS: The low numbers of women and faculty with URiM race/ethnicity in this radiation oncology faculty sample limits the ability to compare career trajectory and compensation by those characteristics. Given that point estimates were <1, our findings do not contradict larger multispecialty studies that suggest an ongoing need to monitor equity.

Research Administration

Tankeu AT, Van Winckel G, Elmers J, Jaccard E, Superti-Furga A, **Wolf B**, and Tran C. Biotinidase deficiency: What have we learned in forty years? *Mol Genet Metab* 2023; 138(4):107560. PMID: 37027963. [Full Text](#)

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BACKGROUND: Biotinidase deficiency (BD) is an autosomal recessively inherited disorder that was first described in 1982. Forty years after its first description, we compiled available clinical data on BD with the aim of generating a more comprehensive picture of this condition. **METHODS:** A systematic search strategy was performed in relevant databases without limits for publication date or languages. We screened 3966 records and included 144 articles reporting individuals with BD and their clinical presentation as well as the outcomes, when available. **RESULTS:** This study included 1113 individuals with BD. More than half (51.5%) of these individuals were diagnosed by newborn screening, 43.3% in presence of clinical symptoms and 5.2% due to family screening. We grouped symptomatic individuals into four main clinical presentations: neonatal-onset (<1 month; 7.9%), early childhood-onset (<2 years; 59.2%), juvenile-onset (2-16 years; 25.1%) and adult-onset (>16 years; 7.7%). BD affected five main organ systems: nervous system (67.2%), skin (53.7%), eye (34.4%), auditory (26.9%) and respiratory system (17.8%). Involvement was mainly multisystemic (82.2%) of individuals, whereas isolated system presentation was seen in only 17.2% of individuals. When reported, metabolic acidosis was present in 42.4% of symptomatic individuals and characteristic abnormal organic acid metabolites were found in 57.1%. Biotin treatment led to clinical stability or improvement in 89.2% of individuals. 1.6% of reported individuals with BD died due to non-availability of treatment or late diagnosis. **CONCLUSION:** Newborn screening has had a major positive impact on the outcome of many individuals with BD. However, undiagnosed and non-treated BD remains a health concern. Given the risk of mortality or complications associated with late or missed diagnosis if newborn screening is not available, a trial of biotin should be considered in undiagnosed infants and adults exhibiting suspected clinical signs. Enzymatic activity and/or analysis of genetic variants can readily confirm the diagnosis of BD.

Research Administration

Tran BD, Mangu R, Tai-Seale M, **Lafata JE**, and Zheng K. Automatic speech recognition performance for digital scribes: a performance comparison between general-purpose and specialized models tuned for patient-clinician conversations. *AMIA Annu Symp Proc* 2022; 2022:1072-1080. PMID: 37128439.

[Request Article](#)

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One promising solution to address physician data entry needs is through the development of so-called "digital scribes," or tools which aim to automate clinical documentation via automatic speech recognition (ASR) of patient-clinician conversations. Evaluation of specialized ASR models in this domain, useful for understanding feasibility and development opportunities, has been difficult because most models have been under development. Following the commercial release of such models, we report an independent evaluation of four models, two general-purpose, and two for medical conversation with a corpus of 36 primary care conversations. We identify word error rates (WER) of 8.8%-10.5% and word-level diarization error rates (WDER) ranging from 1.8%-13.9%, which are generally lower than previous reports. The findings indicate that, while there is room for improvement, the performance of these specialized models, at least under ideal recording conditions, may be amenable to the development of downstream applications which rely on ASR of patient-clinician conversations.

Sleep Medicine

Dauvilliers Y, **Roth T**, Bogan R, Thorpy MJ, Morse AM, Roy A, Dubow J, and Gudeman J. Efficacy of Once-Nightly Sodium Oxybate (FT218) in Narcolepsy Type 1 and Type 2: Post Hoc Analysis From the Phase 3 REST-ON Trial. *Sleep* 2023; Epub ahead of print. PMID: 37246913. [Full Text](#)

Sleep-Wake Disorders Center, Department of Neurology, Gui-de-Chauliac Hospital, Institute for Neurosciences of Montpellier INM, INSERM, University of Montpellier, Montpellier, France.

Sleep Disorders and Research Center, Henry Ford Health System, Detroit, MI, USA.

University of South Carolina School of Medicine, Columbia, SC, USA, and Medical University of SC, Charleston, SC, USA.

Montefiore Medical Center, New York, NY, USA.

Geisinger Commonwealth School of Medicine, Geisinger Medical Center, Janet Weis Children's Hospital, Danville, PA, USA.

Ohio Sleep Medicine Institute, Dublin, OH, USA.

Avadel Pharmaceuticals, Chesterfield, MO, USA.

STUDY OBJECTIVES: Post hoc analyses from the phase 3 REST-ON trial evaluated efficacy of extended-release once-nightly sodium oxybate (ON-SXB; FT218) vs placebo for daytime sleepiness and disrupted nighttime sleep in narcolepsy type 1 (NT1) and 2 (NT2). **METHODS:** Participants were stratified by narcolepsy type and randomized 1:1 to ON-SXB (4.5 g, week 1; 6 g, weeks 2-3; 7.5 g, weeks 4-8; and 9 g, weeks 9-13) or placebo. Assessments included mean sleep latency on Maintenance of Wakefulness Test (MWT) and Clinical Global Impression-Improvement (CGI-I) rating (coprimary endpoints) and sleep stage shifts, nocturnal arousals, and patient-reported sleep quality, refreshing nature of sleep, and Epworth Sleepiness Scale (ESS) score (secondary endpoints) separately in NT1 and NT2 subgroups. **RESULTS:** The modified intent-to-treat population comprised 190 participants (NT1, n=145; NT2, n=45). Significant improvements were demonstrated with ON-SXB vs placebo in sleep latency for NT1 (all doses, P<0.001) and NT2 (6 and 9 g, P<0.05) subgroups. Greater proportions of participants in both subgroups had CGI-I ratings of much/very much improved with ON-SXB vs placebo. Sleep stage shifts and sleep quality significantly improved in both subgroups (all doses vs placebo, P<0.001). Significant improvements with all ON-SXB doses vs placebo in refreshing nature of sleep (P<0.001), nocturnal arousals (P<0.05), and ESS scores (P≤0.001) were reported for NT1 with directional improvements for NT2. **CONCLUSIONS:** Clinically meaningful improvements of a single ON-SXB bedtime dose were shown for daytime sleepiness and DNS in NT1 and NT2, with less power for the limited NT2 subgroup.

Sleep Medicine

Kalmbach DA, Cheng P, Roth T, Fellman-Couture C, Sagong C, and Drake CL. A two-night polysomnography preliminary study in pregnant women with insomnia: suicidal ideation and nocturnal cognitive arousal prospectively predict objective nocturnal wakefulness. *Sleep Adv* 2023; 4(1):zpad016. PMID: 37193270. [Full Text](#)

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STUDY OBJECTIVES: Sleep disruption is common in pregnancy, manifesting as insomnia in half of pregnant women as well as increasing objective nocturnal wakefulness across gestation. Despite potential overlap between insomnia and objective sleep disturbances in pregnancy, objective nocturnal wakefulness and its potential contributing factors remain uncharacterized in prenatal insomnia. The present study described objective sleep disturbances in pregnant women with insomnia and identified insomnia-related predictors of objective nocturnal wakefulness. **METHODS:** Eighteen pregnant women with clinically significant insomnia symptoms ($n = 12/18$ with DSM-5 insomnia disorder) underwent two overnight polysomnography (PSG) studies. Insomnia symptoms (Insomnia Severity Index), depression and suicidal ideation (Edinburgh Postnatal Depression Scale), and nocturnal cognitive arousal (Pre-Sleep Arousal Scale, Cognitive factor) were assessed before bedtime on each PSG night. Unique to Night 2, participants were awakened after 2 minutes of N2 sleep and reported their in-lab nocturnal (i.e. pre-sleep) cognitive arousal. **RESULTS:** Difficulty maintaining sleep was the most common objective sleep disturbance affecting 65%-67% of women across both nights, which contributed to short and inefficient sleep. Nocturnal cognitive arousal and suicidal ideation were the most robust predictors of objective nocturnal wakefulness. Preliminary evidence suggested nocturnal cognitive arousal mediates the effects of suicidal ideation and insomnia symptoms on objective nocturnal wakefulness. **CONCLUSIONS:** Nocturnal cognitive arousal may facilitate upstream effects of suicidal ideation and insomnia symptoms on objective nocturnal wakefulness. Insomnia therapeutics reducing nocturnal cognitive arousal may benefit objective sleep in pregnant women presenting with these symptoms.

Sleep Medicine

Szabo ST, Hopkins SC, Lew R, Loebel A, **Roth T**, and Koblan KS. A multicenter, double-blind, placebo-controlled, randomized, Phase 1b crossover trial comparing two doses of ulotaront with placebo in the treatment of narcolepsy-cataplexy. *Sleep Med* 2023; 107:202-211. PMID: 37209427. [Full Text](#)

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BACKGROUND: Ulotaront (SEP-363856) is a novel agonist at trace amine-associated receptor 1 and serotonin 5-HT(1A) receptors in clinical development for the treatment of schizophrenia. Previous studies demonstrated ulotaront suppresses rapid eye movement (REM) sleep in both rodents and healthy volunteers. We assessed acute and sustained treatments of ulotaront on REM sleep and symptoms of cataplexy and alertness in subjects with narcolepsy-cataplexy. **METHODS:** In a multicenter, double-blind, placebo-controlled, randomized, 3-way crossover study, ulotaront was evaluated in 16 adults with narcolepsy-cataplexy. Two oral doses of ulotaront (25 mg and 50 mg) were administered daily for 2 weeks and compared with matching placebo (6-treatment sequence, 3-period, 3-treatment). **RESULTS:** Acute treatment with both 25 mg and 50 mg of ulotaront reduced minutes spent in nighttime REM compared to placebo. A sustained 2-week administration of both doses of ulotaront reduced the mean number of short-onset REM periods (SOREMPs) during daytime multiple sleep latency test (MSLT) compared to placebo. Although cataplexy events decreased from the overall mean baseline during the 2-week treatment period, neither dose of ulotaront statistically separated from placebo ($p = 0.76$, 25 mg;

p = 0.82, 50 mg), and no significant improvement in patient and clinician measures of sleepiness from baseline to end of the 2-week treatment period occurred in any treatment group. **CONCLUSIONS:** Acute and sustained treatment with ulotaront reduced nighttime REM duration and daytime SOREMPs, respectively. The effect of ulotaront on suppression of REM did not demonstrate a statistical or clinically meaningful effect in narcolepsy-cataplexy. **REGISTRATION:** ClinicalTrials.gov identifier: NCT05015673.

Surgery

Aru RG, Deery SE, **Kavousi Y**, Black JH, 3rd, Burns WR, and Hicks CW. Retrograde open celiac stenting for ischemic hepatitis after pancreaticoduodenectomy. *J Vasc Surg Cases Innov Tech* 2023; 9(2):101136. PMID: 37168707. [Full Text](#)

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A 74-year-old man with pancreatic cancer had undergone pancreaticoduodenectomy and subsequently developed ischemic hepatitis secondary to high-grade celiac artery stenosis. Celiac antegrade stenting via brachial artery access was unsuccessful, and open antegrade bypass would have required takedown of the pancreatic and/or biliary anastomoses for adequate exposure. Retrograde open celiac stenting was, therefore, successfully performed via the gastroduodenal artery stump. His ischemic hepatitis resolved, and he was ultimately discharged with dual antiplatelet therapy. Computed tomography angiography at 6 months demonstrated a widely patent celiac stent. Retrograde open celiac stenting via the gastroduodenal artery stump is an alternative to open bypass for celiac revascularization not amenable to percutaneous antegrade stenting in patients who have undergone pancreaticoduodenectomy.

Surgery

Chandran T, Bani Hani M, and Hain J. Simultaneous Ovarian and Renal Vein Thrombosis as a Rare Cause of Postoperative Pain After Sigmoid Colectomy. *Am Surg* 2023; Epub ahead of print. PMID: 36999581. [Full Text](#)

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Post operative pain is often the cause of many ED visits. When patients are discharged and return with postoperative abdominal pain, common etiologies include incisional pain, neuropathic pain, musculoskeletal pain from immobility, ileus, and more sinister causes including adhesive bowel obstruction, abscess formation, and anastomotic leak. We present a 62 year-old female without any hereditary thrombophilia or other prothrombotic factors who presented to the ED after a sigmoid colectomy and diverting ileostomy for perforated diverticulitis and subsequent ileostomy reversal with abdominal pain. CT discovered a left ovarian vein thrombus extending into the left renal vein. With a myriad of diagnoses, it is important to have a low threshold for imaging to rule out serious pathology and also diagnose any unusual causes that can be treated promptly to prevent organ damage and subsequent complications.

Surgery

Claasen M, **Ivanics T**, Beumer BR, de Wilde RF, Polak WG, Sapisochin G, and JNM IJ. An international multicentre evaluation of treatment strategies for combined hepatocellular-cholangiocarcinoma. *JHEP Rep* 2023; 5(6):100745. PMID: 37234277. [Full Text](#)

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BACKGROUND & AIMS: Management of combined hepatocellular-cholangiocarcinoma (cHCC-CCA) is not well-defined. Therefore, we evaluated the management of cHCC-CCA using an online hospital-wide multicentre survey sent to expert centres. **METHODS:** A survey was sent to members of the European Network for the Study of Cholangiocarcinoma (ENS-CCA) and the International Cholangiocarcinoma Research Network (ICRN), in July 2021. To capture the respondents' contemporary decision-making process, a hypothetical case study with different tumour size and number combinations was embedded. **RESULTS:** Of 155 surveys obtained, 87 (56%) were completed in full and included for analysis. Respondents represented Europe (68%), North America (20%), Asia (11%), and South America (1%) and included surgeons (46%), oncologists (29%), and hepatologists/gastroenterologists (25%). Two-thirds of the respondents included at least one new patient with cHCC-CCA per year. Liver resection was reported as the most likely treatment for a single cHCC-CCA lesion of 2.0-6.0 cm (range: 73-93%) and for two lesions, one up to 6 cm and a second well-defined lesion of 2.0 cm (range: 60-66%). Nonetheless, marked interdisciplinary differences were noted. Surgeons mainly adhered to resection if technically feasible, whereas up to half of the hepatologists/gastroenterologists and oncologists switched to alternative treatment options with increasing tumour burden. Fifty-one (59%) clinicians considered liver transplantation as an option for patients with cHCC-CCA, with the Milan criteria defining the upper limit of inclusion. Overall, well-defined cHCC-CCA treatment policies were lacking and management was most often dependent on local expertise. **CONCLUSIONS:** Liver resection is considered the first-line treatment of cHCC-CCA, with many clinicians supporting liver transplantation within limits. Marked interdisciplinary differences were reported, depending on local expertise. These findings stress the need for a well-defined multicentre prospective trial comparing treatments, including liver transplantation, to optimise the therapeutic management of cHCC-CCA. **IMPACT AND IMPLICATIONS:** Because the treatment of combined hepatocellular-cholangiocarcinoma (cHCC-CCA), a rare form of liver cancer, is currently not well-defined, we evaluated the contemporary treatment of this rare tumour type through an online survey sent to expert centres around the world. Based on the responses from 87 clinicians (46% surgeons, 29% oncologists, 25% hepatologists/gastroenterologists), representing four continents and 25 different countries, we found that liver resection is considered the first-line treatment of cHCC-CCA, with many clinicians supporting liver transplantation within limits. Nonetheless, marked differences in treatment decisions were reported among the different specialties (surgeon vs. oncologist vs. hepatologist/gastroenterologist), highlighting the urgent need for a standardisation of therapeutic strategies for patients with cHCC-CCA.

Surgery

Hutchings H, Okeke B, Behinaein P, and **Okereke IC**. Evidence-based approach to determine risk of elective surgery during COVID-19 era. *J Thorac Dis* 2023. PMID: Not assigned. [Full Text](#).

Surgery

Janes LA, Hammond JW, Bonham AJ, **Carlin AM**, Ghaferi AA, Varban OA, Ehlers AP, and Finks JF. The effect of marijuana use on short-term outcomes with bariatric surgery. *Surg Obes Relat Dis* 2023; Epub ahead of print. PMID: 37142472. [Full Text](#)

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BACKGROUND: Despite increasing marijuana use nationwide, there are limited data on implications of marijuana use on bariatric surgery outcomes. **OBJECTIVE:** We investigated associations between marijuana use and bariatric surgery outcomes. **SETTING:** Multicenter statewide study utilizing data from the Michigan Bariatric Surgery Collaborative, a payor-funded consortium including over 40 hospitals and 80 surgeons performing bariatric surgery statewide. **METHODS:** We analyzed data from the Michigan

Bariatric Surgery Collaborative clinical registry on patients who underwent a laparoscopic sleeve gastrectomy or Roux-en-Y gastric bypass between June 2019 and June 2020. Patients were surveyed at baseline and annually on medication use, depression symptoms, and substance use. Regression analysis was performed to compare 30-day and 1-year outcomes between marijuana users and nonusers. RESULTS: Of 6879 patients, 574 reported baseline marijuana use and 139 reported use at baseline and 1 year. Marijuana users were more likely to be current smokers (14% versus 8%, $P < .0001$), screen positive for alcohol use disorder (20.0% versus 8.4%, $P < .0001$), and score higher on the Patient Health Questionnaire-8 (6.1 versus 3.0, $P < .0001$). There were no statistically significant differences in 30-day outcomes or co-morbidity remission at 1 year. Marijuana users had higher adjusted total mean weight loss (47.6 versus 38.1 kg, $P < .0001$) and body mass index reduction (17 versus 14 kg/m²), $P < .0001$). CONCLUSIONS: Marijuana use is not associated with worse 30-day outcomes or 1-year weight loss outcomes and should not be a barrier to bariatric surgery. However, marijuana use is associated with higher rates of smoking, substance use, and depression. These patients may benefit from additional mental health and substance abuse counseling.

Surgery

Kabbani L, Eng M, Onofrey K, Weaver M, and Nypaver T. Novel technique to fenestrate an aortic dissection flap using electrocautery. *J Vasc Surg Cases Innov Tech* 2023; 9(2):101108. PMID: 37181477.

[Full Text](#)

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Chronic distal thoracic dissections treated with thoracic endovascular repair are prone to type Ib false lumen perfusion. When the supraceliac aorta is of normal caliber, fenestration of the dissection flap proximal to the visceral vessels creates a seal zone for the thoracic stent graft and eliminates the type Ib false lumen perfusion. We describe a novel way of crossing the septum using electrocautery delivered through a wire tip then fenestrating the septum using electrocautery delivered over a 1-mm area of uninsulated wire to cut the septum. We believe the use of electrocautery creates a controlled and deliberate aortic fenestration during endovascular repair of a distal thoracic dissections.

Surgery

Khatib SA, Adil K, Schultz L, Gadgeel S, Popoff A, Ajlouni M, Simoff M, Movsas B, and Feldman A. Clinical Outcome in Patients With Early-Stage Small Cell Lung Cancer Treated With Surgery or Radiation in the Absence of Prophylactic Cranial Irradiation: A Single-Center Retrospective Study. *Adv Radiat Oncol* 2023; 8(4):101190. PMID: 37152487. [Full Text](#)

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PURPOSE: As screening chest computed tomography for patients at high risk for cancer has become more widely accepted, increasing numbers of patients with early-stage small cell lung cancer (SCLC) are being diagnosed. Although surgery is an accepted option for patients with early-stage SCLC, for patients who decline or cannot undergo surgery, stereotactic body radiation treatment (SBRT) is an alternative. Although prophylactic cranial irradiation (PCI) improves survival in patients with limited-stage SCLC, PCI for early-stage SCLC (stage T1-T2) has not been explored. This study defines survival and recurrence patterns in patients with early-stage SCLC who were treated with surgery or SBRT in the absence of PCI. **METHODS AND MATERIALS:** In this single-institution retrospective study, 14 patients diagnosed with early-stage SCLC (stage T1-T2) between July 2015 and May 2021 at a single tertiary care hospital were treated with SBRT or surgery with no PCI. Primary outcomes were locoregional cancer recurrence, distant recurrence, recurrence-free survival, and overall survival. The secondary outcome was development of brain metastasis. Analyses included Cox regression, Kaplan-Meier survival, and log-rank tests. **RESULTS:** A total of 14 patients (5 women and 9 men) were included in the study: 9 with stage T1 and 5 with stage T2 SCLC. Six patients (43%) received SBRT and 8 (57%) had surgical treatment. All

patients except 1 received adjuvant chemotherapy. Median follow-up was 14.3 months (range, 2.4-64.4 months), and the median age at diagnosis was 71.5 years (range, 54-81 years). Cox regression and log-rank tests showed no significant differences in any outcomes between the surgery and SBRT groups, and no patients developed brain metastases during the study period. **CONCLUSIONS:** Data are lacking regarding the benefit of PCI in early-stage SCLC. Although the sample size in this study was too small to draw any conclusions, the findings add to the ongoing dialogue regarding the importance of PCI in this patient population. No difference was identified in survival and cancer recurrence in patients who received either surgery or SBRT in the absence of PCI.

Surgery

Miller-Matero LR, Ross K, DePascale E, Arellano C, Zelenak L, Braciszewski JM, Hecht LM, Haley EN, Loree AM, and Carlin AM. Post-surgical cannabis use is associated with weight loss among individuals up to 4 years after bariatric surgery. *Surg Endosc* 2023; Epub ahead of print. PMID: 37202524. [Full Text](#)

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INTRODUCTION: Although cannabis is known to stimulate appetite, it is not clear whether cannabis use may impact weight loss outcomes following bariatric surgery. Although some work has suggested that pre-surgical cannabis use is not associated with post-surgical weight loss, the role of post-surgical cannabis use has not yet been examined. The purpose of this study was to measure pre- and post-surgical cannabis use and determine whether cannabis use was associated with weight loss outcomes following bariatric surgery. **METHODS:** Patients who underwent bariatric surgery over a 4-year period at a single health care system were invited to complete a survey regarding pre- and post-surgical cannabis use and report their current weight. Pre-surgical weight and BMI were extracted from medical records to calculate change in BMI (Δ BMI), percent total weight loss (%TWL), percent excess weight loss (%EWL), whether participants experienced a successful weight loss outcome, and whether participants had weight recurrence. **RESULTS:** Among all participants (N = 759), 10.7% and 14.5% engaged in pre- and post-surgical cannabis use, respectively. Pre-surgical cannabis use was not associated with any weight loss outcomes ($p > 0.05$). Any post-surgical cannabis use was associated with lower %EWL ($p = 0.04$) and greater likelihood of weight recurrence ($p = 0.04$). Weekly cannabis use was associated with lower %EWL ($p = 0.003$), lower %TWL ($p = 0.04$), and a lower likelihood of having a successful weight loss outcome ($p = 0.02$). **CONCLUSIONS:** Although pre-surgical cannabis use may not predict weight loss outcomes, post-surgical cannabis was associated with poorer weight loss outcomes. Frequent use (i.e., weekly) may be especially problematic. Providers should consider screening patients for cannabis use and educate them about the potential impact of postoperative cannabis use on weight loss following bariatric surgery.

Surgery

Moffatt C, Bath J, Rogers RT, Colglazier JJ, Braet DJ, Coleman DM, Scali ST, Back MR, Magee GA, Plotkin A, Dueppers P, Zimmermann A, Afifi RO, Khan S, Zarkowsky D, Dyba G, Soult MC, Mani K, Wanhainen A, Setacci C, Lenti M, **Kabbani LS, Weaver MR**, Bissacco D, Trimarchi S, Stoecker JB, Wang GJ, Szeberin Z, Pomozi E, Gelabert HA, Tish S, Hoel AW, Cortolillo NS, Spangler EL, Passman MA, De Caridi G, Benedetto F, Zhou W, Abuhakmeh Y, Newton DH, Liu CM, Tinelli G, Tshomba Y, Katoh A, Siada SS, Khashram M, Gormley Mbbch S, Mullins JR, Schmittling ZC, Maldonado TS, Politano AD, Rynio P, Kazimierzczak A, Gombert A, Jalaie H, Spath P, Gallitto E, Czerny M, Berger T, Davies MG, Stilo F, Montelione N, Mezzetto L, Veraldi GF, D'Oria M, Lepidi S, Lawrence P, and Woo K. International Multi-Institutional Experience with Presentation and Management of Aortic Arch Laterality in Aberrant Subclavian Artery and Kommerell's Diverticulum. *Ann Vasc Surg* 2023; Epub ahead of print. PMID: 37236537. [Full Text](#)

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OBJECTIVE: Aberrant subclavian artery (ASA) with or without Kommerell's diverticulum (KD) is a rare anatomic aortic arch anomaly that can cause dysphagia and/or life-threatening rupture. The objective of this study is to compare outcomes of ASA/KD repair in patients with a left vs right aortic arch. **METHODS:** Using the Vascular Low Frequency Disease Consortium methodology, a retrospective review was performed of patients ≥ 18 years old with surgical treatment of ASA/KD from 2000 to 2020 at 20 institutions. **RESULTS:** 288 patients with ASA with or without KD were identified; 222 LAA, and 66 RAA. Mean age at repair was younger in LAA 54 vs. 58 years ($p=0.06$). Patients in RAA were more likely to undergo repair due to symptoms (72.7% vs. 55.9%, $p=0.01$), and more likely to present with dysphagia (57.6% vs. 39.1%, $p<0.01$). The hybrid open/endovascular approach was the most common repair type in both groups. Rates of intraoperative complications, death within 30 days, return to the operating room, symptom relief and endoleaks were not significantly different. For patients with symptom status follow up data, in LAA, 61.7% had complete relief, 34.0% had partial relief and 4.3% had no change. In RAA, 60.7% had complete relief, 34.4% had partial relief and 4.9% had no change. **CONCLUSIONS:** In patients with ASA/KD, RAA patients were less common than LAA, presented more frequently with dysphagia, had symptoms as an indication for intervention, and underwent treatment at a younger age. Open, endovascular and hybrid repair approaches appear equally effective, regardless of arch laterality.

Surgery

Natour AK, Shepard AD, Rteil A, Kafri O, Lee A, Nypaver TJ, Weaver M, Dobesh K, and Kabbani L. Necessity, Role, and Outcomes of Fasciotomy in Patients with Acute Limb Ischemia. *Ann Vasc Surg* 2023; Epub ahead of print. PMID: 37142120. [Full Text](#)

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BACKGROUND: The incidence of compartment syndrome in patients with acute lower limb ischemia (ALLI) and the effects of fasciotomy on outcomes are largely undefined. This study aimed to define the incidence of compartment syndrome in patients with ALLI and to examine whether different fasciotomy strategies are associated with specific patient outcomes. **METHODS:** A single-center retrospective study of patients who had ALLI between April 2016 and October 2020 at a tertiary care center. Patients were categorized into groups as having received early and late therapeutic fasciotomy (TF), early prophylactic fasciotomy (PF), early exploratory fasciotomy, and no fasciotomy. Primary outcome was 30-day amputation rate. Secondary outcomes were 30-day and 1-year mortality, 1-year amputation rate, and length of stay. Groups were compared using descriptive statistics to assess the association of fasciotomy approach with outcomes. **RESULTS:** During the study period, 266 patients were treated for ALLI, and 62 patients (23%) underwent 66 fasciotomies. A total of 41 TF, 23 PF, and 2 exploratory fasciotomies were done. There were 58 early fasciotomies performed (88% of 66 limbs): 33 (57%) early TF, 23 (40%) PF, and 2 (3%) exploratory. There were 8 patients who developed compartment syndrome after their revascularization operation and received delayed TF (12% of 66 limbs). The total number of TF was 41, which was 15% of all ALLI patients. The mean \pm SD time to fasciotomy closure was 6.7 ± 5.7 days, which did not differ between PF and TF groups. Significantly more patients in the TF group had an amputation at 30 days (11 [29%] vs. 1 [5%]; $P = 0.03$) and at 1 year (6 [18%] vs. 2 [9%]; $P = 0.02$) than those in the PF group. Length of stay was increased in both TF (16 days) and PF (19 days) patients compared to nonfasciotomy patients (10 days; $P < 0.01$) but did not differ between the 2 fasciotomy groups ($P = 0.4$). Thirty-day limb loss was highest in patients who underwent early TF (10/33, 33%), intermediate in those with delayed TF (1/8, 13%), and lowest in PF (1/23, 5%; $P = 0.03$). **CONCLUSIONS:** Approximately 15% of patients with ALLI in our cohort required a TF for compartment syndrome. Close postoperative monitoring of ALLI patients who did not undergo early fasciotomy did detect delayed compartment syndrome; however, this approach did not prevent limb loss. To optimize limb salvage, physicians treating patients with ALLI should be experienced in how to recognize and treat compartment syndrome.

Surgery

Pansuriya S, Ekkel E, Pearl L, and Hain J. Complicated Diverticulitis and Pelvic Radiation Leading to Colonic Stricture, Colorectal Fistula, and Anal Stenosis. *Am Surg* 2023; Epub ahead of print. PMID: 37163698. [Full Text](#)

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The purpose of this case is to highlight a rare case of sigmoid colon-to-rectum fistula. A 66-year-old man with a history of pelvic radiation and diverticulosis presented to the emergency department with a 3-week history of abdominal pain and watery diarrhea. Computed tomography (CT) imaging was significant for a sigmoid-to-rectum fistula with sigmoid stricture. The patient underwent a laparoscopic colectomy with end colostomy. Pathology revealed perforated diverticulitis. To date, there have been no cases reported in literature describing sigmoid-to-rectum fistula. In conclusion, it is important to consider the development of complex diverticular disease in patients with history of pelvic radiation.

Surgery

Pearl L, Kerby E, Pansuriya S, Alnajjar R, and **Lim J.** Tension Pneumopericardium Causing Cardiogenic Shock due to Blunt Injury to the Chest. *Am Surg* 2023; Epub ahead of print. PMID: 37158506. [Full Text](#)

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Pneumopericardium is an exceptionally uncommon phenomenon in the setting of blunt polytrauma. It is imperative for trauma providers to identify tension pneumopericardium despite its rarity. A 22-year-old male motorcyclist presented to the hospital after colliding with a car going approximately 50 mph. The patient was hemodynamically unstable and had diminished breath sounds bilaterally. Bilateral chest tubes were placed, yielding little improvement in condition. While obtaining CT imaging, pneumopericardium was promptly identified. Pulses were lost immediately before pericardiocentesis, and resuscitative thoracotomy was performed. The pericardial sac was tense and an immediate gush of air released upon incising the sac. The patient was taken immediately to the Operating Room for further exploration and repair.

Surgery

Poruk KE, **Shah R,** Grandhi MS, Wright GP, and Parikh AA. External Beam Radiation Therapy for Primary Liver Cancers: An ASTRO Clinical Practice Guideline-A Surgical Perspective. *Ann Surg Oncol* 2023; Epub ahead of print. PMID: 37179271. [Full Text](#)

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Surgery

Varban OA. Comment on: Bariatric surgeon perceptions of the safety of same-day sleeve gastrectomy in the state of Massachusetts. *Surg Obes Relat Dis* 2023; 19(5):457-458. PMID: 36585330. [Full Text](#)

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Surgery

Webb SP, and **Ahmad I.** Novel and Innovative Surgical Strategies for Recurrent Rectal Cancer: Uncommon Resections, Local Interventions for Pelvic Reoccurrence, and Intraoperative Radiation Therapy. *Clin Colon Rectal Surg* 2023. PMID: Not assigned. [Request Article](#)

Urology

Hijazi MA, Prebay ZJ, Johnson A, **Wilder S, Patel A**, Mehra R, Montie JE, Noyes SL, Mirza M, Jafri M, Weizer A, Sarle R, Ghani KR, **Rogers C**, and Lane BR. Reply by Authors. *Urol Pract* 2023; 101097. Epub ahead of print. PMID: 37155952. [Full Text](#)

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Urology

Malchow T, **Corsi NJ, Majdalany SE, Piontkowski AJ, Corsi MP**, Friedman B, **Butaney M, Rakic I, Arora S, Jamil M, Dalela D, Brodowsky E, Sood A, Ginsburg KB, Rogers C, Atiemo H, and Abdollah F**. Who is shaping the future of academic urology? A descriptive analysis of residency program directors. *Urology* 2023; Epub ahead of print. PMID: 37209882. [Full Text](#)

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OBJECTIVE: To characterize the demographics, educational background, and scholarly characteristics of current urology residency program directors (PDs). **METHODS:** Urology programs were identified by the listing on the "Accredited US Urology Programs" section of American Urological Association website as of October 2021. Demographics and academic data were collected via publicly available department website and Google search engine. Metrics obtained included years of service as program director from time of appointment, sex, medical school/residency/fellowship, all-time H-index, dual degrees obtained, and professorial ranking. **RESULTS:** One hundred and forty-seven accredited urological residencies were reviewed; every PD was included. The majority were male (78%) and fellowship trained (68%). Women represented only 22% of PDs. The median active time served as PD, as of 11/2021, was 4 years (IQR: 2-7). Forty (28%) were faculty at the same program they completed their residency. The median all-time H-index was 12 (IQR: 7-19; range 1-61). Twelve program directors also served as chair of their department. **CONCLUSIONS:** The vast majority of program directors are male, fellowship trained, and have served for

less than five years. Future studies are necessary to follow the trends of representation in leaders of urology residency programs.

Urology

Sharma G, Shah M, Ahluwalia P, Dasgupta P, Challacombe BJ, **Bhandari M**, Ahlawat R, Rawal S, Buffi NM, Sivaraman A, Porter JR, **Rogers C**, Mottrie A, Abaza R, Rha KH, Moon D, Yuvaraja TB, Parekh DJ, Capitanio U, Maes KK, Porpiglia F, Turkeri L, and Gautam G. Off-clamp Versus On-clamp Robot-assisted Partial Nephrectomy: A Propensity-matched Analysis. *Eur Urol Oncol* 2023; Epub ahead of print. PMID: 37193626. [Request Article](#)

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Swedish Medical Center, Seattle, WA, USA.

Henry Ford Hospital, Detroit, MI, USA.

ORSI Academy, Melle, Belgium.

Central Ohio Urology Group and Mount Carmel Health System Prostate Cancer Program, Columbus, OH, USA.

Yonsei University Health System, Seoul, South Korea.

Peter MacCallum Hospital, Royal Melbourne Clinical School, Melbourne, University of Melbourne, Australia.

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BACKGROUND: Partial nephrectomy is the preferred treatment option for the management of small renal masses. On-clamp partial nephrectomy is associated with a risk of ischemia and a greater loss of postoperative renal function, while the off-clamp procedure decreases the duration of renal ischemia, leading to better renal function preservation. However, the efficacy of the off- versus on-clamp partial nephrectomy for renal function preservation remains debatable. **OBJECTIVE:** To compare perioperative and functional outcomes following off- and on-clamp robot-assisted partial nephrectomy (RAPN).

DESIGN, SETTING, AND PARTICIPANTS: This study used the prospective multinational collaborative Vattikuti Collective Quality Initiative (VCQI) database for RAPN.

OUTCOME MEASUREMENTS AND STATISTICAL ANALYSIS: The primary objective of this study was the comparison of perioperative and functional outcomes between patients who underwent off- and on-clamp RAPN. Propensity scores were calculated for age, sex, body mass index (BMI), renal nephrometry score (RNS) and preoperative estimated glomerular filtration rate (eGFR). **RESULTS AND LIMITATIONS:** Of the 2114 patients, 210 had undergone off-clamp RAPN and others on-clamp procedure. Propensity matching was possible for 205 patients in a 1:1 ratio. After matching, the two groups were comparable for age, sex, BMI, tumor size, multifocality, tumor side, face of tumor, RNS, polar location of the tumor, surgical access, and preoperative hemoglobin, creatinine, and eGFR. There was no difference between the two groups for intraoperative (4.8% vs 5.3%, $p = 0.823$) and postoperative (11.2% vs 8.3%, $p = 0.318$) complications. Need for blood transfusion (2.9% vs 0, $p = 0.030$) and conversion to radical nephrectomy (10.2% vs 1%, $p < 0.001$) were significantly higher in the off-clamp group. At the last follow-up, there was no difference

between the two groups for creatinine and eGFR. The mean fall in eGFR at the last follow-up compared with that at baseline was equivalent between the two groups (-16.0 vs -17.3 ml/min, $p = 0.985$). CONCLUSIONS: Off-clamp RAPN does not result in better renal functional preservation. Alternatively, it may be associated with increased rates of conversion to radical nephrectomy and need for blood transfusion. PATIENT SUMMARY: With this multicentric study, we noted that performing robotic partial nephrectomy without clamping the blood supply to the kidney is not associated with better preservation of renal function. However, off-clamp partial nephrectomy is associated with increased rates of conversion to radical nephrectomy and blood transfusion.

Urology

Sharma G, Singh G, Ahluwalia P, Dasgupta P, Challacombe BJ, **Bhandari M**, Ahlawat R, Rawal S, Buffi NM, Ananth S, Porter JR, **Rogers C**, Mottrie A, Abaza R, Rha KH, Moon D, Yuvaraja TB, Parekh DJ, Capitanio U, Maes KK, Porpiglia F, Turkeri L, and Gautam G. Robot-assisted partial nephrectomy in morbidly obese patients: a VCQI database study. *J Robot Surg* 2023; Epub ahead of print. PMID: 37248374. [Full Text](#)

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Swedish Medical Center, Seattle, WA, USA.

Henry Ford Hospital, Detroit, MI, USA.

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Central Ohio Urology Group and Mount Carmel, St. Ann's Hospital, Columbus, OH, USA.

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To compare perioperative outcomes following robot-assisted partial nephrectomy (RAPN) in patients with morbid obesity (body mass index (BMI > 40 kg/m²)) and non-obese patients. Using the Vattikuti Collective quality initiative (VCQI) database for RAPN, data for morbidly obese and non-obese patients was obtained. Propensity scores were calculated for two treatment groups (morbidly obese vs. non-obese) for the following variables i.e. age, sex, tumor size, RNS, surgical access (retroperitoneal/transperitoneal) and estimated glomerular filtration rate (eGFR) to ensure comparability. The primary outcome for the study was comparison of trifecta between the two groups. In this study, 158 morbidly obese patients were matched with 158 non-obese patients undergoing RAPN. Two groups matched well for age, sex, tumor size, eGFR and RNS. There was no difference between two groups for ischemia time, blood loss, blood transfusion, conversion to radical nephrectomy, length of stay, intraoperative and postoperative complications. Operative time was longer in morbidly obese patients (median 210 min vs. 120 min, $p = 0.000$). On pathological analysis, malignant tumors were more likely in the morbidly obese group (83.1% vs. 73.4%, $p = 0.018$). Trifecta outcomes were comparable between the two groups (60.1% vs. 63.3%, $p = 0.563$). The Median duration of follow-up was 12 months (1-96 months). The morbidly obese group had significantly higher day one creatinine (1.25 ± 0.7 vs. 1.07 ± 0.37 , $p = 0.001$) and significantly lower day one eGFR (62.1 ± 19 vs. 69.2 ± 21 , $p = 0.018$). However,

there was no difference between the two groups for the last follow-up creatinine and eGFR. RAPN in morbidly obese patients is associated with equivalent perioperative outcomes compared to non-obese patients.

Urology

Sood A, Grauer R, **Diaz-Insua M**, Tewari AK, Hemal AK, Shrivastava A, **Peabody JO**, **Jeong W**, **Abdollah F**, Rudzinski JK, Andrews JR, Gorin MA, Bhandari M, and **Menon M**. 15-year biochemical failure, metastasis, salvage therapy, and cancer-specific and overall survival rates in men treated with robotic radical prostatectomy for PSA-screen detected prostate cancer. *Prostate Cancer Prostatic Dis* 2023; Epub ahead of print. PMID: 37142635. [Request Article](#)

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Department of Urology, University of Pittsburgh School of Medicine, Pittsburgh, PA, USA.

BACKGROUND: An informed decision regarding a treatment option requires data on its long-term efficacy and side-effect profile. While the side-effects of robotic radical prostatectomy have been well-quantified, the data on its long-term efficacy are lacking. We here provide 15-year oncological outcomes of clinically-localized prostate cancer (CLPCa) patients treated with robot-assisted laparoscopic prostatectomy (RALP). **METHODS:** We treated 1,807 men with CLPCa with RALP between 2001 and 2005 and prospectively collected follow-up data through 2020. We examined the rates of biochemical failure (BCF), metastatic progression, secondary therapy use, PCa-specific mortality (PCSM), and overall survival (OS) using Kaplan-Meier and competing-risk cumulative incidence methods as appropriate. **RESULTS:** The median follow-up was 14.1 years. Six hundred eight and 312 men had D'Amico intermediate- and high-risk disease, respectively. Overall, the 15-year rates of BCF, metastasis, secondary therapy use, PCSM, and OS were 28.1%, 4.0%, 16.3%, 2.5%, and 82.1%, respectively. The rates of oncologic failure increased with increasing D'Amico (preoperative) and Diaz (postoperative) risk scores - BCF, metastasis, and PCSM rates in D'Amico low-, intermediate-, and high-risk groups at 15-years were 15.2%, 38.3%, and 44.1% [BCF], 1.1%, 4.1%, and 13.0% [metastasis], and 0.5%, 3.4%, and 6.6% [PCSM], respectively, and in Diaz risk groups 1, 2, 3, 4, and 5 were 5.5%, 20.6%, 41.8%, 66.9%, and 89.2% [BCF], 0%, 0.5%, 3.2%, 20.5%, and 60.0% [metastasis], and 0%, 0.8%, 0.6%, 13.5%, and 37.5% [PCSM], respectively. The OS rates in D'Amico low-to-high and Diaz 1-to-5 risk groups at 15-years were 85.9%, 78.6%, and 75.2%, and 89.4%, 83.2%, 80.6%, 67.2%, and 23.4%, respectively. **CONCLUSIONS:** Men diagnosed with clinically-localized prostate cancer in the contemporaneous PSA-screening era and treated with RALP achieve durable long-term oncological control. The data reported here (in a risk-stratified manner) represent the longest follow-up after robotic radical prostatectomy, and as such, should be of value when counseling patients regarding expected oncologic outcomes from RALP.

Conference Abstracts

Administration

Louis LA, Jiang L, **Caldwell M**, Marsh E, and Townsel C. National ED Utilization and Admission for Hypertensive Disorders in Pregnancy and Postpartum, (2006-2019). *Reprod Sci* 2023; 30:246A. [Full Text](#)

L.A. Louis, University of Michigan, Ann Arbor, MI, United States

Introduction: Hypertensive disorders in pregnancy and the postpartum period (HDPP)-chronic hypertension, gestational hypertension, preeclampsia, and eclampsia-are leading causes of maternal mortality in the United States. Despite national standards for prenatal and postpartum care, the emergency department (ED) remains a critical access point for pregnant and postpartum patients. Previous findings have demonstrated increased ED visits for HDPP, yet little is known about the national trend of ED utilization with subsequent admission for HDPP. Our objective was to examine ED utilization and admission for HDPP between 2006-2019 and to identify risk factors for admission. Methods: We conducted a retrospective study using data extracted from the Nationwide Emergency Department Sample (NEDS), developed by the Healthcare Cost and Utilization Project. ICD-9 and ICD-10 codes were used to identify women aged 15-50 who were seen in the ED with a primary diagnosis of pregnancy-related hypertension between 2006-2019. Variables of interest included race, income quartile, insurance type, and admission. Data on race was available for 2019 only. Chi square-test, T-test and linear/logistic regression analysis were performed using SAS 9.4. Results: From 2006 to 2019, there were 600,818 ED visits with primary diagnosis of HDPP (0.11% of all visits). The admission rate for HDPP was 60.0% compared to 7.4% for all other primary diagnoses. ED visits for HDPP were highest among patients with Medicaid insurance (54.2%), living in metropolitan areas (69.2%), and presenting to teaching hospitals (69%) ($p < 0.01$). Admission for HDPP significantly increased from 54.8% to 77.3% during the study period ($p < 0.01$). Patients with Medicaid insurance were twice as likely to be admitted compared to self-pay ($p < 0.0001$). Admissions were 78% higher for younger patients (aged 15-19) compared to older patients (age 45-50) ($p < 0.01$). White patients experienced increasing hospital admission with increasing income quartile (30.6% lowest income quartile to 59.3% highest income quartile, $p < 0.01$), while Black patients experienced higher admission as income quartile decreased (42.7% lowest income quartile to 14.5% highest income quartile, $p < 0.01$). Conclusion: The rate of ED visits and admission for HDPP increased significantly between 2006 and 2019. Younger age (15-19) and having Medicaid insurance were associated with higher ED utilization and admission. These findings highlight the need for increased outpatient hypertension monitoring programs particularly for our youngest patients and those with public insurance. More studies are needed to better understand the intersectional impact of race and income quartile given the inverse impacts on admission rates.

Administration

Manuel E, Vogt E, Jiang C, **Caldwell M**, and Marsh E. Analysis of National Emergency Department Utilization for Endometriosis by Race and Socioeconomic Status (2019). *Reprod Sci* 2023; 30:51A. [Full Text](#)

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Introduction: Endometriosis is a disease in which endometrial glands and stroma are found outside of the uterine cavity. It is the third leading cause of infertility and affects 10% of reproductive-aged females in the United States (US). Severe pelvic pain is a common symptom and can lead patients to seek emergency care. While previous studies have characterized emergency department (ED) utilization for endometriosis, no study has examined racial and socioeconomic factors impacting ED utilization and admission rates. Methods: Retrospective analysis was performed on the Nationwide Emergency Department Sample (NEDS). ICD-10 codes were used to identify patients 21-50 years old who were seen in EDs with a primary diagnosis of endometriosis in 2019. NEDS included data on race for the first time in 2019, the most recent year of available data. In addition to race; age, payer type, and income quartile by zip code were also analyzed. Linear and logistic regression models were used to estimate associations of interest. Results: In 2019, there were 12,351 ED visits with a primary diagnosis of endometriosis among 21-50 year old patients. The majority of visits occurred in patients younger than 35 years old, with the largest

proportion of visits (24.5%) in 31-35 year olds, followed by those aged 26-30 years (22.6%). White patients made up 49.3% of ED visits with primary diagnosis of endometriosis, while Black and Hispanic patients comprised 24.3% and 16.4% respectively. Patients from the lowest income quartile comprised the largest proportion of ED visits for endometriosis at 31.2%. Hospital admission rates were higher for patients with a primary diagnosis of endometriosis (13%) compared to admission rates for all other ED diagnoses (7.9%, $p < 0.01$) and were highest for patients in the highest income quartile (17%) versus the lowest quartile (11.7%). Native American and Asian-American/Pacific Islander (AAPI) patients with endometriosis were twice as likely to be admitted than their White or Black counterparts. Conclusion: While ED visits for endometriosis constitute a small percentage of visits overall, admission rates continue to be higher than all other ED diagnoses. White patients make up the majority of ED visits for endometriosis and are more likely to be higher-income, privately-insured patients. Although patients from the lowest income quartile comprised the largest proportion of ED visits for endometriosis, higher admission rates were seen in the highest income quartile. With regards to race, highest admission rates were seen amongst Native American and AAPI patients possibly suggesting more severe disease at presentation and limited access to outpatient gynecologic care in these groups. Future studies are needed to identify and increase access to equitable outpatient management of endometriosis.

Cardiology/Cardiovascular Research

Kabbani L, Eng M, Onofrey K, Weaver M, and Nypaver T. Novel technique to fenestrate an aortic dissection flap using electrocautery. *J Vasc Surg Cases Innov Tech* 2023; 9(2). [Full Text](#)

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Chronic distal thoracic dissections treated with thoracic endovascular repair are prone to type Ib false lumen perfusion. When the supraceliac aorta is of normal caliber, fenestration of the dissection flap proximal to the visceral vessels creates a seal zone for the thoracic stent graft and eliminates the type Ib false lumen perfusion. We describe a novel way of crossing the septum using electrocautery delivered through a wire tip then fenestrating the septum using electrocautery delivered over a 1-mm area of uninsulated wire to cut the septum. We believe the use of electrocautery creates a controlled and deliberate aortic fenestration during endovascular repair of a distal thoracic dissections.

Dermatology

Fried RG, Rieder EA, Alexis AF, Baldwin H, Graber E, Harper JC, **Stein Gold L**, Hebert A, Del Rosso J, Kircik L, Grada A, Narayanan S, Koscielny V, and Kasujee I. Impact of acne on social functioning, emotional functioning, and activities of daily living (ADL) among patients with moderate-to-severe non-nodular acne vulgaris (AV) administered sarecycline in real-world community practices across the US (PROSES Study). *J Clin Aesthet Dermatol* 2023; 16(4):S6-S7. [Full Text](#)

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Background: Understanding of AV impact on patient Health-related quality of life (HRQoL) is still evolving. Objective: The key objective of this analysis was to evaluate patient-perceived impact of AV on emotional/social functioning and ADL through a novel Expert Panel Questionnaire (EPQ), among AV patients administered sarecycline, an oral narrow-spectrum, tetracycline-derived antibiotic, in real-world community practices across the US. Methods: A single-arm, prospective cohort study (PROSES) was conducted with moderate-to-severe non-nodular AV patients aged 9 years or older who were prescribed sarecycline. Primary endpoint included 11-item EPQ responses (completed by patients (>12 years) and caregivers (for patients 9-11 yrs) at Week 12 and corresponding change from baseline (CFB)). All items were scored on a five-point adjectival response scale (score=0/1 (never/rarely, not at all/slightly/a little), score=2 (some of the time, somewhat), and score=3/4 (most of the time/all of the time, moderately/extremely, quite a bit/very much)). The EPQs related to AV impact on emotional functioning (EPQ 1-4), social functioning (EPQ 5-7), and ADL (EPQ 8-11) were formulated based on dermatology expert panel consensus using modified Delphi method. CFB in proportion of patients reporting score=0/1 (no/least impact) for EPQ items at Week-12 were analyzed. Results: A total of 253 AV patients completed the study (adults: 60.08%; pediatric: 39.92%; female: 66.40%). CFB in patients reporting score=0/1 (no/least impact) for each EPQ item increased statistically significantly ($p < 0.0001$) except for EPQ10. In emotional

functioning domain, CFB=31.62 percent for EPQ1 on patients' mood/anger; CFB= 28.85 percent, 20.95 percent, 38.74 percent respectively for EPQ2, EPQ3, EPQ4 on hopelessness/worries about skin. In social functioning domain, CFB=23.72 percent for EPQ5 on patients' social media/selfie activity, CFB=22.93 percent for EPQ6 on impact on real-life plans, and CFB=21.34 percent for EPQ7 on efforts to hide AV. In ADL domain, CFB=15.02 percent for EPQ8 on picked-on/judged due to AV, CFB=13.83 percent for EPQ9 on ability to reach future goals, and CFB=0.99 percent for EPQ10 on parent understanding of AV concerns (for patients<18yrs), and CFB=18.18 percent for EPQ11 on sleep impact. Conclusion: Patients reporting no/least AV burden in emotional functioning, social functioning, and ADL significantly increased in patients with moderate-to-severe AV who were administered sarecycline for 12 weeks.

Dermatology

Kern JA, Wood E, **Almukhtar R**, Angra K, Lipp M, and Goldman MP. Evaluation of an SPF50 sunscreen containing photolyase and antioxidants for its antiphotaging properties. *J Clin Aesthet Dermatol* 2023; 16(4):S21. [Full Text](#)

J.A. Kern, University of California, San Diego School of Medicine, San Diego, CA, United States

Background: Skin exposure to ultraviolet radiation (UVR) causes DNA damage, which can lead to mutagenesis, carcinogenesis, cellular death, and photoaging. Signs of photoaging include wrinkling, erythema, skin laxity, uneven skin texture, and hyperpigmentation. Photolyase is an exogenous DNA repair enzyme that can restore DNA integrity when applied topically to human skin. Antioxidants also play a key role in reducing UVR-associated molecular damage. Objective: To assess the efficacy of a mineral-based sunscreen containing 10.7% zinc oxide (SPF50) with the active ingredients photolyase, antioxidants (Vitamin E and Peptide Q10), and peptides in both protecting against and repairing visible signs of photoaging. Methods: In an open-label, single-center, 12-week study, patients aged 35-65 years and Fitzpatrick Skin Types II-IV applied the sunscreen daily for 84 days. VISIA photography was performed at baseline as well as 6- and 12-week follow-ups. At each visit, the investigator and subject evaluated clinical photoaging parameters including overall photodamage, fine lines/wrinkles, coarse lines/wrinkles, skin tone evenness, tactile roughness, and radiance. Results: The Investigator Global Aesthetic Improvement Scale (IGAIS) found that 63 percent of patients showed improvement at Week 6 and 81 percent at Week 12. The Subject Global Aesthetic Improvement Scale (SGAIS) showed 58 percent and 62.5 percent of patients reported the appearance of their skin was improved at Week 6 and 12, respectively. Overall, there was a statistically significant improvement in skin radiance as well as improvement in overall facial aesthetics reported by both investigators and subjects. Conclusion: A mineral-based SPF50 sunscreen containing photolyase, antioxidants, and peptides is effective at repairing some clinical signs of photoaging.

Dermatology

Lebwohl M, **Stein Gold L**, Gooderham MJ, Papp KA, Ferris LK, Adam DN, Hong HC, Kircik LH, Zirwas M, Burnett P, Higham R, Krupa D, and Berk D. Durability of efficacy and safety of roflumilast cream 0.3% in adults with chronic plaque psoriasis from a 52-Week, Phase 2 open-label safety trial. *J Clin Aesthet Dermatol* 2023; 16(4):S27. [Full Text](#)

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Background: Roflumilast cream is a potent phosphodiesterase 4 inhibitor recently approved in the United States for treatment of plaque psoriasis with no limitations on duration of use. An open-label trial was conducted to evaluate long-term safety (52 weeks) of once-daily roflumilast cream (NCT03764475). This abstract presents data on durability of response as measured by the percentage of patients with an Investigator Global Assessment (IGA) score of Clear or Almost Clear, percentage improvement in Psoriasis Area Severity Index (PASI) score, and reduction in body surface area (BSA) affected. Methods: Patients who completed a parent, Phase 2b, 12-week randomized controlled trial could continue on open-label roflumilast cream 0.3% (Cohort-1, n=230), and patients naïve to roflumilast were also enrolled (Cohort-2, n=102). All psoriasis lesions (except scalp) were treated, including face and intertriginous areas for up to 52 weeks. If affected, palms and soles were treated, but not evaluated towards any efficacy assessments. Median duration of response was determined using the Kaplan-Meier method.

Results: With cumulative treatment up to 64 weeks in Cohort-1 and 52 weeks in Cohort-2, long-term safety and tolerability were consistent with the 12-week, Phase 2b study. Overall, 73.5 percent of patients completed the study; 3.9 percent discontinued due to adverse events (AE) and 0.9 percent discontinued due to lack of efficacy. Treatment-related AEs were reported in 2.7 percent patients; none were deemed serious. Investigator tolerability assessments at each visit demonstrated 99 percent of patients rated “no evidence of irritation.” At Week 52, IGA Success (demonstrating Clear/Almost Clear plus 2-grade improvement from baseline) was achieved by 34.8 percent of patients in Cohort-1 and 39.5 percent in Cohort-2. Of patients in Cohort-2, 40 percent of patients achieved IGA success at Week 12. IGA Clear/Almost Clear was achieved by 46.8 percent of patients across both cohorts at Week 12 and consistent through Week 52 (44.8%). Similarly, a 60.5 percent mean PASI improvement and 60.1 percent mean BSA improvement from baseline were observed at Week 12 and consistent through Week 52 (59.4% and 63.3%, respectively). Of the 185 patients who achieved IGA Clear/Almost Clear during the openlabel trial, the median durability of IGA of Clear/ Almost Clear was 10 months (40.1 weeks). Among patients who achieved an IGA of Clear or Almost Clear, 50 percent maintained Clear or Almost Clear status for at least 10 months. Conclusion: In this long-term safety study, roflumilast cream was well tolerated with a safety profile consistent with the parent Ph2b trial, and effectively maintained clear/almost clear skin with no tachyphylaxis observed.

Dermatology

Lubov JE, Strahan AG, Prasad S, Casas CG, Hruza G, Lim H, French LE, and Freeman E. 533 Mpox first skin lesion location: A reflection of mode of transmission? *J Invest Dermatol* 2023; 143(5):S91. [Full Text](#)

The 2022 mpox outbreak affected 84,318 individuals in 110 countries. Mpox is transmitted by multiple modalities, including direct contact, respiratory droplets, and fomites among others. Identifying skin lesions aids prompt diagnosis. Variation in initial skin lesion location is not well understood; it is hypothesized that mode of transmission may determine primary inoculation site and subsequent clinical presentation. This study sourced healthcare provider-reported data from the AAD/ILDS Dermatology COVID-19, Mpox, and Emerging Infections Registry to explore factors related to the location of the first skin lesion in mpox cases. Out 119 mpox cases, 115 had primary lesion location data. 97% were male with a median age of 37. Most (83/115, 72%) patients had first skin lesions in the genito-anal area, and 32/115 (27%) had lesions elsewhere or had morbilliform rash. 74% of males had the first lesion in the genito-anal region compared to females (25%, $p=0.03$). Males in same-sex relationships had ano-genital lesions more often than men in other relationships (77% vs. 44%, $p=0.03$). The type of mpox exposure was also associated with first lesion location: 83% of patients who contracted mpox from a spouse or other sexual contact had ano-genital lesions as compared to a non-sexual contact (0%, $p<0.01$). This analysis characterized factors associated with the first mpox skin lesion location, which can aid healthcare providers in diagnosis and shed light on transmission. This data suggests that type of exposure and mode of transmission may be associated with primary lesion location; patients who contracted mpox from sexual contact were more likely to have ano-genital lesions.

Dermatology

Stein Gold L, Alexis AF, Harper JC, Graber E, Baldwin H, Kircik L, Del R, Fried RG, Rieder EA, Hebert A, Narayanan S, Koscielny V, and Kasujee I. Comparison of investigator global assessment (IGA) and patient's global assessment (ptGA) of acne vulgaris among patients with moderate-to-severe non-nodular acne vulgaris (AV) administered sarecycline in community practices across the US: Analysis of PROSES study results. *J Clin Aesthet Dermatol* 2023; 16(4):S5-S6. [Full Text](#)

L. Stein Gold, Henry Ford Health System, Bloomfield, MI, United States

Background: The objective of this analysis was to compare facial IGA and patient's Global assessment (ptGA) of AV at baseline and Weeks 4, 8 and 12, among AV patients administered sarecycline in community practices across the US Methods: A single-arm, prospective cohort study (PROSES) was conducted with moderate-to-severe non-nodular AV patients older than 9 years who were prescribed sarecycline in realworld community practices in the US Facial IGA of patient's AV status was reported by the study clinician and ptGA of AV was collected as part of validated ASIS questionnaire; both measures

used a five-point adjectival response scale of 0 (clear), 1 (almost-clear), 2 (mild), 3 (moderate), 4 (severe), and collected at baseline and Weeks 4, 8 and 12. Proportion of patients with clear/almost clear AV per IGA and ptGA were analyzed for all study timepoints. Results: A total of 253 AV patients completed the study (adults 60.08%; pediatric 39.92%; female: 66.40%; Caucasian/white: 68.38%, African-American: 8.70%; Other-races: 22.92%; moderate AV: 86.56%; severe AV: 13.44%). At baseline, 0 percent and 4.74 percent were clear/ almost clear, per IGA and ptGA respectively. At Week-4, 9.09 percent and 29.18 percent were clear/almost-clear, per IGA and ptGA respectively. At Week-8, 33.99 percent and 41.84 percent were clear/almost-clear, per IGA and ptGA respectively. At Week-12, 58.89 percent and 59.29 percent were clear/almost-clear, per IGA and ptGA respectively. Increase in proportion of patients with clear/almost clear over time, as measured by IGA and ptGA were respectively statistically significant at $p < 0.0001$. Conclusion: Within the study cohort administered sarecycline, a narrow-spectrum, tetracyclinederived antibiotic, for 12 weeks, proportion of patients with clear/almost clear facial AV (as measured by clinicians and patients respectively) increased significantly, with almost six out of 10 patients achieving clear/almost clear facial AV at Week 12.

Dermatology

Stein Gold L, Griffiths CEM, Tallman AM, Brown PM, and Lebwohl MG. Tapinarof cream 1% once daily for plaque psoriasis: improvements in quality of life and clinical efficacy in two pivotal Phase 3 trials. *J Clin Aesthet Dermatol* 2023; 16(4):S30-S31. [Full Text](#)

L. Stein Gold, Henry Ford Health System, Detroit, MI, United States

Background: Tapinarof cream 1% once daily (QD) demonstrated statistically significant efficacy versus vehicle and was well-tolerated in adults with mild to severe plaque psoriasis in PSOARING 1 and 2, two 12-week, Phase 3 trials. In addition, significantly greater improvements in Dermatology Life Quality Index (DLQI) change from baseline at Week 12 were observed with tapinarof versus vehicle. Objective: To evaluate correlations between the DLQI and clinical efficacy as assessed by Physician Global Assessment (PGA) and Psoriasis Area and Severity Index (PASI) in PSOARING 1 and 2. Methods: Patients in PSOARING 1 and 2 were randomized to tapinarof or vehicle for 12 weeks. The DLQI is a 10-item scale where each item is rated on a 4-point scale from zero (not at all) to three (very much); lower scores indicate higher quality of life (QoL). Efficacy was evaluated using PGA and PASI. Spearman rank correlations evaluated correlations between changes in efficacy and QoL from baseline at Week 12. Analyses used observed cases and were based on the intention-to-treat population. Results: 683 tapinarof and 342 vehicle-treated patients from PSOARING 1 and 2 were included in the analyses. At baseline, 79.2 to 83.9 percent of patients had a PGA of 3 (moderate), mean PASI of 8.9-9.1, and mean DLQI of 8.2-8.7 (moderate impact of disease on QoL) in PSOARING 1 and 2. Mean change in DLQI from baseline at Week 12 was -5.0 vs -3.0 ($P < 0.0001$) and -4.7 vs. -1.6 ($P < 0.0001$), with tapinarof versus vehicle in each trial, respectively. The minimal clinically important difference in DLQI of 4 was exceeded at Week 12 in the tapinarof groups. A significantly higher proportion of patients achieved a DLQI of 0 or 1 at Week 12 in the tapinarof groups versus vehicle: 47.4 percent vs 23.3 percent ($P < 0.0001$) and 44.9 percent vs 16.1 percent ($P < 0.0001$) in each trial, respectively; statistical significance in favor of tapinarof was observed as early as Week 4. Improvements in DLQI in the tapinarof groups at Week 12 were statistically correlated with improvements in PGA (0.28 and 0.29, $P < 0.0001$) and PASI (0.28 and 0.40, $P < 0.0001$) in each trial, respectively. Conclusion: Tapinarof demonstrated rapid, clinically meaningful, and statistically significant improvements in clinical efficacy and patient-reported QoL. A large percentage of tapinaroftreated patients achieved a DLQI of 0 or 1, i.e., no negative effects of disease on QoL. Correlations between improvements in DLQI and clinical efficacy measures suggest that, beyond clinical improvements captured by the PASI and PGA, other important factors such as mental/emotional wellbeing and satisfaction with treatment contribute to the considerable overall improvement in QoL observed in these trials.

Dermatology

Stein Gold L, Kircik LH, Tanghetti, Baldwin H, Draelos Z, Gold M, Lain E, Pariser DM, Sadick N, Pillai R, and Bhatt V. Efficacy and safety of a fixed-dose clindamycin phosphate 1.2%, benzoyl peroxide 3.1%, and adapalene 0.15% gel for moderate-to-severe acne: Randomized Phase 2 and Phase 3 studies of the first triplecombination drug. *J Clin Aesthet Dermatol* 2023; 16(4):S6. [Full Text](#)

L. Stein Gold, Henry Ford Hospital, Detroit, MI, United States

Background: A three-pronged approach to acne treatment-combining an antibiotic, antibacterial, and retinoid-may provide greater efficacy and tolerability than single/double treatments while potentially reducing antibiotic resistance and increasing patient compliance. Clindamycin phosphate 1.2%/BPO 3.1%/adapalene 0.15% (IDP- 126) gel is the first triple-combination, fixed-dose topical acne product in development that addresses the major pathophysiological abnormalities in acne patients. The efficacy, safety, and tolerability of IDP-126 gel was evaluated in Phase 2 and 3 studies of patients with moderate-to-severe acne. Methods: A Phase 2 (N=741; NCT03170388) and two Phase 3 (N=183; N=180; NCT04214639; NCT04214652), double-blind, randomized, 12-week studies enrolled participants aged ≥ 9 years with moderate-to-severe acne. Participants were randomized to receive once-daily IDP-126 or vehicle; the Phase 2 study included three additional randomization arms containing dyad gels: BPO/adapalene; clindamycin phosphate/BPO; and clindamycin phosphate/adapalene (data not shown). Endpoints included participants achieving ≥ 2 -grade reduction from baseline in Evaluator's Global Severity Score and clear/almost clear skin (treatment success) and least-squares mean percent change from baseline in inflammatory and noninflammatory lesion counts. Treatment-emergent adverse events (TEAEs) were also assessed. Results: In all three studies at Week 12, half of participants achieved treatment success with IDP-126 (Phase 2: 52.5%; Phase 3: 49.6%, 50.5%) versus less than one-fourth with vehicle (8.1%; 24.9%, 20.5%; $P < 0.01$, all). IDP-126 resulted in over 70% reductions in inflammatory and noninflammatory lesions at Week 12, significantly greater than vehicle (range: inflammatory, 75.7%-80.1% vs 50.4%-59.6%; noninflammatory, 71.0%-73.3% vs 45.8%-49.0%; $P < 0.001$, all). Most TEAEs were of mild-moderate severity, and less than 4 percent of IDP-126-treated participants discontinued study/treatment due to AEs. Conclusion: The innovative fixed-dose, triple-combination IDP-126 gel was efficacious and well tolerated in three clinical studies of children, adolescents, and adults with moderate-to-severe acne.

Dermatology

Strahan AG, Lubov JE, Prasad S, Casas CG, Hruza G, **Lim H**, French LE, and Freeman E. 441 Mpox in persons living with HIV: Results from an international dermatologic registry. *J Invest Dermatol* 2023; 143(5):S76. [Full Text](#)

In 2022, mpox virus spread globally with 99% of cases in non-endemic countries. People living with HIV (PLHIV) are disproportionately affected, often with more severe clinical features and outcomes. The AAD/ILDS Dermatology COVID-19, Monkeypox (mpox), and Emerging Infections registry captured mpox cases from 13 non-endemic countries in a de-identified REDCap registry. We aimed to examine cutaneous symptomatology and outcomes in cases of mpox in PLHIV. Of 119 reported cases, 44 were PLHIV (35%). Cases were 98% male, with a median age of 38 years, located in Europe (57%) and the U.S. (39%). Nearly half of PLHIV reported skin lesions as their initial sign (45%), and 43 (98%) reported skin lesions during illness. The primary initial lesion locations were peri-anal (34%) and genito-inguinal (34%). Co-infection with other sexually transmissible infections (STI) was more common in PLHIV, 57% vs. 38% in all-registry cases ($p < 0.01$). The most common co-infections were gonorrhea, syphilis, and chlamydia. Time to resolution was 17 days, 3 days shorter than all-registry cases, which may be due to higher use of Tecovirimat in PLHIV (36% vs. 25% in all-registry cases; $p < 0.01$). There were no differences in the frequency of hospitalization or scarring. One death was reported. Overall, cutaneous lesion count was similar in PLHIV and all-registry cases. Lesion location was more frequently reported in the peri-anal and genito-inguinal regions. Sample size was insufficient to detect differences in length of infection, hospitalization, or scarring in PLHIV. Co-infections were more common in PLHIV, highlighting a need for co-testing for STIs during mpox evaluation.

Emergency Medicine

Fann P, Taylor A, and New A. Prolonged Serotonin Toxicity after Massive Duloxetine Overdose. *J Med Toxicol* 2023; 19(2):71. [Full Text](#)

P. Fann, Henry Ford Jackson, Jackson, MI, United States

Background: Duloxetine is a second-generation serotonin-norepinephrine reuptake inhibitor prescribed for treatment of both psychiatric disorders and neuropathic pain. Duloxetine overdose overall is uncommon, with a total of 6281 cases involving the drug reported in 2020 by the American Association of Poison Control Centers. Survival after massive overdose has previously been reported, however prior case reviews have typically described resolution of symptoms within 24 hours. Methods: This is a case report obtained via retrospective chart review. Results: A 74-year-old female who presented to the emergency department after intentional ingestion of an unknown quantity of duloxetine and cephalexin. After an unremarkable initial workup, the patient was admitted medically for observation. She was noted by the hospitalist team 13 hours after ingestion to have mild generalized tremors and nystagmus. The next day the patient developed severe agitation, jerking body movements, and worsening horizontal nystagmus. After not responding to initial therapy, psychology and neurology were consulted. Ultimately, the patient was diagnosed with opsoclonus-myoclonus syndrome secondary to serotonin toxicity 64 hours after her initial ingestion. A duloxetine level was drawn 81 hours post-ingestion and returned a serum level of 3300 ng/mL. The majority of the patient's neurologic symptoms resolved five days after her admission. Conclusions: This case highlights the potential for both delayed onset as well as prolonged serotonin toxicity in cases of massive duloxetine overdose. Few case reports outside of postmortem studies have identified serum concentrations above 2000 ng/mL. This patient's level returned at 3300 ng/mL more than three days after her initial ingestion. Several mechanisms may have delayed clearance and prolonged toxicity in this case including delayed absorption secondary to diabetic gastroparesis, inhibition of CYP2D6 by duloxetine, and reversal of CYP1A2 induction by smoking cessation upon admission..

Emergency Medicine

Louis LA, Jiang L, **Caldwell M**, Marsh E, and Townsel C. National ED Utilization and Admission for Hypertensive Disorders in Pregnancy and Postpartum, (2006-2019). *Reprod Sci* 2023; 30:246A. [Full Text](#)

L.A. Louis, University of Michigan, Ann Arbor, MI, United States

Introduction: Hypertensive disorders in pregnancy and the postpartum period (HDPP)-chronic hypertension, gestational hypertension, preeclampsia, and eclampsia-are leading causes of maternal mortality in the United States. Despite national standards for prenatal and postpartum care, the emergency department (ED) remains a critical access point for pregnant and postpartum patients. Previous findings have demonstrated increased ED visits for HDPP, yet little is known about the national trend of ED utilization with subsequent admission for HDPP. Our objective was to examine ED utilization and admission for HDPP between 2006-2019 and to identify risk factors for admission. Methods: We conducted a retrospective study using data extracted from the Nationwide Emergency Department Sample (NEDS), developed by the Healthcare Cost and Utilization Project. ICD-9 and ICD-10 codes were used to identify women aged 15-50 who were seen in the ED with a primary diagnosis of pregnancy-related hypertension between 2006-2019. Variables of interest included race, income quartile, insurance type, and admission. Data on race was available for 2019 only. Chi square-test, T-test and linear/logistic regression analysis were performed using SAS 9.4. Results: From 2006 to 2019, there were 600,818 ED visits with primary diagnosis of HDPP (0.11% of all visits). The admission rate for HDPP was 60.0% compared to 7.4% for all other primary diagnoses. ED visits for HDPP were highest among patients with Medicaid insurance (54.2%), living in metropolitan areas (69.2%), and presenting to teaching hospitals (69%) ($p < 0.01$). Admission for HDPP significantly increased from 54.8% to 77.3% during the study period ($p < 0.01$). Patients with Medicaid insurance were twice as likely to be admitted compared to self-pay ($p < 0.0001$). Admissions were 78% higher for younger patients (aged 15-19) compared to older patients (age 45-50) ($p < 0.01$). White patients experienced increasing hospital admission with increasing income quartile (30.6% lowest income quartile to 59.3% highest income quartile, $p < 0.01$), while Black patients experienced higher admission as income quartile decreased (42.7% lowest income quartile to 14.5% highest income quartile, $p < 0.01$). Conclusion: The rate of ED visits and admission for HDPP increased significantly between 2006 and 2019. Younger age (15-19) and having Medicaid insurance were associated with higher ED utilization and admission. These findings highlight the need for increased outpatient hypertension monitoring programs particularly for our youngest patients and those with public insurance. More studies are needed to better understand the intersectional impact of race and income quartile given the inverse impacts on admission rates.

Emergency Medicine

Manuel E, Vogt E, Jiang C, **Caldwell M**, and Marsh E. Analysis of National Emergency Department Utilization for Endometriosis by Rac and Socioeconomic Status (2019). *Reprod Sci* 2023; 30:51A. [Full Text](#)

M. Caldwell, Henry Ford Health, Detroit, MI, United States

Introduction: Endometriosis is a disease in which endometrial glands and stroma are found outside of the uterine cavity. It is the third leading cause of infertility and affects 10% of reproductive-aged females in the United States (US). Severe pelvic pain is a common symptom and can lead patients to seek emergency care. While previous studies have characterized emergency department (ED) utilization for endometriosis, no study has examined racial and socioeconomic factors impacting ED utilization and admission rates. **Methods:** Retrospective analysis was performed on the Nationwide Emergency Department Sample (NEDS). ICD-10 codes were used to identify patients 21-50 years old who were seen in EDs with a primary diagnosis of endometriosis in 2019. NEDS included data on rac for the first time in 2019, the most recent year of available data. In addition to rac; age, payer type, and income quartile by zip code were also analyzed. Linear and logistic regression models were used to estimate associations of interest. **Results:** In 2019, there were 12,351 ED visits with a primary diagnosis of endometriosis among 21-50 year old patients. The majority of visits occurred in patients younger than 35 years old, with the largest proportion of visits (24.5%) in 31-35 year olds, followed by those aged 26-30 years (22.6%). White patients made up 49.3% of ED visits with primary diagnosis of endometriosis, while Black and Hispanic patients comprised 24.3% and 16.4% respectively. Patients from the lowest income quartile comprised the largest proportion of ED visits for endometriosis at 31.2%. Hospital admission rates were higher for patients with a primary diagnosis of endometriosis (13%) compared to admission rates for all other ED diagnoses (7.9%, $p < 0.01$) and were highest for patients in the highest income quartile (17%) versus the lowest quartile (11.7%). Native American and Asian-American/Pacific Islander (AAPI) patients with endometriosis were twice as likely to be admitted than their White or Black counterparts. **Conclusion:** While ED visits for endometriosis constitute a small percentage of visits overall, admission rates continue to be higher than all other ED diagnoses. White patients make up the majority of ED visits for endometriosis and are more likely to be higher-income, privately-insured patients. Although patients from the lowest income quartile comprised the largest proportion of ED visits for endometriosis, higher admission rates were seen in the highest income quartile. With regards to rac, highest admission rates were seen amongst Native American and AAPI patients possibly suggesting more severe disease at presentation and limited access to outpatient gynecologic care in these groups. Future studies are needed to identify and increase access to equitable outpatient management of endometriosis.

Emergency Medicine

Rogers D, and **Owczarek L**. Running Up That Hill: A Case of Nighttime Arm Pain in a High School Cross-Country Runner. *Clin J Sport Med* 2023; 33(3):e73-e74. [Full Text](#)

D. Rogers, Henry Ford Health, Detroit, MI, United States

History: A 16 year-old male cross-country runner presents to the sports medicine clinic with right upper arm pain that began 10 months prior. No history of injury or traumatic event. Describes the pain as achy, present throughout the day, but it is much more significant at night and has been interfering with sleep. The pain has been stable since it's onset and is neither improving nor worsening. Lifting weights will mildly aggravate the pain. He has not tried any medications for treatment. He was evaluated at an urgent care shortly after the pain began. X-rays were performed that showed a periosteal reaction, and he was referred to our department. He denied any fever, chills, malaise, fatigue, weight loss. **Physical Exam:** Inspection: No erythema or lesion noted bilaterally. Palpation: Tenderness to palpation in the right mid-humerus. ROM: Full active ROM bilaterally. Muscle strength: 5/5 in biceps, triceps, and rotator cuff bilaterally. Pain reproduced with manual muscle testing of biceps, triceps, and rotator cuff on right side. **Neurovascular:** Intact, no deficits. **Differential Diagnosis:** 26. Ewing Sarcoma 27. Chronic Recurrent Multifocal Osteomyelitis 28. Osteoid Osteoma 29. Osteomyelitis 30. Stress Fracture **Test Results:** XR: Periosteal reaction of the mid shaft of the R humerus. MRI: Marked periosteal thickening and edema of the posteromedial aspect of the R humeral diaphysis. CT: Long segment of periosteal reaction

surrounding the diaphysis of the humerus with thickening of the bone cortex. Bone Scan: Area of increased radiotracer uptake at the site of the periosteal reaction. No other lesions are noted. Path: Fragments of reactive woven bone with associated fibrosis and inflammation. Negative for malignancy. Final Diagnosis: Chronic Recurrent Multifocal Osteomyelitis (CRMO). Discussion: CRMO, also described in the literature as Chronic Non-bacterial Osteomyelitis (CNO), is a rare condition with reported prevalence of 0.4/100 000 worldwide. Typical presentation includes insidious onset nighttime bone pain with or without fevers, and 1 to 20 active bone lesions- most commonly affecting the metaphysis of long bones. Histologic hallmarks of this disease process are bone inflammation in the absence of infection or malignancy. NSAIDs are first line treatment, however some patients require methotrexate, TNF inhibitor and/or bisphosphonate therapy. The IL-1 inhibitor, anakinra, has also been reported as a successful treatment option. Outcome: Our patient underwent a bone biopsy to rule out malignancy/infection and confirm the diagnosis of CRMO. Due to the rarity of this disease, a second opinion was obtained from an outside pathologist, who confirmed the diagnosis of CRMO. NSAID therapy was initiated with resolution of his pain. Follow-Up: Four weeks after bone biopsy he was cleared to return to running. He will be evaluated by rheumatology as approximately 25% of patients diagnosed with CRMO have an associated autoimmune disorder, including skin disorders and chronic inflammatory bowel disease. Due to an average reported remission rate of 40% (with common recurrence) he will be followed closely by orthopedic oncology.

Emergency Medicine

Zamamiri S, and Henkin D. A G-Tube Placed in the Side of Neck: Percutaneous Transesophageal Gastrostomy (PTEG) for Palliation of Malignant Bowel Obstruction (Sci201). *J Pain Symptom Manage* 2023; 65(5):e640. [Full Text](#)

Outcomes: 1. Participants will self-report the ability to utilize percutaneous transesophageal gastrostomy (PTEG) as a palliative treatment option for certain patients with malignant obstruction. 2. Participants will self-report the ability to recognize that PTEG can be as safe and effective as a traditional percutaneous gastrostomy tube. Malignant bowel obstructions may occur in certain advanced cancers, typically presenting with severe pain, intractable nausea, vomiting, or reflux that greatly impairs quality of life. Treatment options include surgical and nonsurgical interventions, such as opioid analgesics, steroids, and anti-secretory and anti-emetic medications, in combination, when feasible, with surgical bypass, luminal stenting, and/or a venting gastrostomy. Those with malignant bowel obstructions with peritoneal disease or malignant ascites are often precluded from interventions. We present an alternative intervention called percutaneous transesophageal gastrostomy (PTEG) that may be offered to patients when a traditional percutaneous gastrostomy cannot be used. We describe a 57-year-old male with stage IV esophageal cancer complicated by peritoneal carcinomatosis and malignant ascites who presented with intractable nausea, vomiting, and reflux, diagnosed with malignant bowel obstruction. Multimodal medical therapies were trialed without relief, and he ultimately was left nasogastric tube (NGT) dependent. This form of gastric venting did adequately control his symptoms. He was not a candidate for other interventions, including a traditional palliative venting gastrostomy due to his peritoneal disease. With evidence that NGT with venting was the only helpful treatment, he underwent a successful PTEG placement by interventional radiology. He found near complete resolution in his obstructive symptoms as well as his throat and nose pain associated with the NGT were also eliminated. The application of the PTEG as a palliative intervention for malignant bowel obstruction is not widely recognized. This form of gastrostomy is effective for venting, feeding, or a combination of both, and is as safe when compared to a traditional gastrostomy. PTEG has been shown to improve quality of life and improve symptom burden when compared to NGT. We present this case to promote wider recognition of PTEG use for those patients who are ineligible for traditional interventions.

Gastroenterology

Younossi ZM, Yilmaz Y, Yu ML, Wong VWS, Fernandez MIC, Isakov VA, Duseja AK, Mendez-Sanchez N, Eguchi Y, Bugianesi E, Burra P, George J, Fan JG, Papatheodoridis GV, Buti M, Chan WK, Alswat KA, Hamid SS, Singal AK, Romero-Gómez M, **Gordon SC**, Roberts S, El Kassas M, Esmat G, Kugelmas M, Ong J, Lam BP, Younossi I, Racila A, Henry L, Stepanova M, and Alqahtani S. NON-ALCOHOLIC FATTY LIVER DISEASE (NAFLD) IS ASSOCIATED WITH SIGNIFICANT IMPAIRMENT OF WORK

PRODUCTIVITY: DATA FROM THE GLOBAL NASH REGISTRY™. *Hepatology* 2023; 77(5):E134-E135. [Full Text](#)

Z.M. Younossi, Inova Health System, United States

Background: Chronic liver diseases (CLDs) such as NAFLD can cause impairment of health-related quality of life and other patient-reported outcomes. Additionally, CLDs can be responsible for a reduction in work productivity due to both missed time at work (absenteeism) and decreased productivity while working (presenteeism). The aim was to evaluate work productivity impairment (WPI) in patients with NAFLD. **Methods:** The Global NASH Registry™ includes NAFLD enrolled from real-life practices. The WPI scores including absenteeism and presenteeism (all range 0-1 with higher scores indicating greater work productivity impairment) were calculated from the Work Productivity and Activity Impairment: Specific Health Problem (WPAI:SHP) instrument. **Results:** A total of 3421 NAFLD patients were included [18 countries; age 52±13 years, 47% male, 18% cirrhosis, 47% type 2 diabetes, 38% history of anxiety, 21% depression, 47% clinically overt fatigue, 48% employed]. For the subjects, WPI score [mean (SD)] was 0.205 (0.300) including 0.051 (0.182) absenteeism, 0.159 (0.250) presenteeism. In multivariate analysis, independent predictors of higher WPI (worse work productivity) among NAFLD subjects, adjusted for the country of enrollment, were history of anxiety (beta±SE = 0.069±0.020), depression (0.054±0.026), and clinically overt fatigue (0.095±0.019) (all p<0.05). On the other hand, there was no associations of WPI in NAFLD with obesity, type 2 diabetes, the presence of cirrhosis or FIB-4 score (all p>0.10). In comparison to historic data from clinical trial enrollees with biopsy-proven NASH (pooled N=2634, 67% diabetes, 33% cirrhosis, 51% employed), subjects with NAFLD enrolled from real-life practices had higher WPI: 0.205 (0.300) vs. 0.135 (0.230), absenteeism 0.051 (0.182) vs. 0.034 (0.140), presenteeism 0.159 (0.250) vs. 0.102 (0.175) (all p<0.01). However, after adjustment for clinico-demographic factors (age, sex, country of enrollment, comorbidities), the association of WPI of NAFLD patients with enrollment setting (real-life setting vs. clinical trial setting) was not significant (p=0.98). **Conclusion:** Patients with NAFLD and NASH have significant impairment of their work productivity which could add substantially to the societal and personal burden of the disease.

Hematology-Oncology

Chen YB, **Farhan S**, Lekakis LJ, Schiller GJ, Yared JA, Assal A, Lee DD, Lane H, Gooley TA, DeFilipp Z, and Saad A. Efficacy of the Addition of RGI-2001 to Tacrolimus and Methotrexate for Acute Gvhd Prevention in Myeloablative HSCT Using HLA-Matched Donors. *Transplant Cell Ther* 2023; 29(2):S248-S249. [Full Text](#)

Background: RGI-2001 is a liposomal glycolipid that binds the CD1d receptor of antigen-presenting cells (APC) resulting in activation of invariant natural killer (iNKT) cells. In the context of alloHCT, this interaction results in a cytokine-dependent Treg proliferation with potential modulation of the GvHD pathogenic cascade. Earlier dose-finding studies have shown that a single dose of RGI-2001 given on the day of alloHCT is safe and potentially contributed to prevention of acute GVHD (aGVHD). **Methods:** RGI-2001-003 is an open-label, multi-center phase 2b study evaluating the efficacy and safety of RGI-2001 when added to a calcineurin inhibitor with methotrexate or mycophenolate mofetil (without T-cell depletion) for the prevention of aGvHD in subjects following myeloablative alloHCT. RGI-2001 was administered in a 30-minute infusion at a dose of 100 ug/kg IV weekly x6 doses, starting on the day of transplant (Days 0, 7, 14, 21, 28, 35). The primary endpoint of the study is incidence of grades II-IV aGvHD by day 100. **Results:** 49 subjects treated at 7 U.S. transplant centers were enrolled. Median age was 52 (range 21-65); 27 were male. Donors were 8/8 HLA-matched unrelated (n=32, 65%) 8/8 HLA-matched related (n=16, 33%), or 7/8 HLA-matched unrelated (n=1, 2%). The most common underlying diseases were AML (n=26, 53%), ALL (n=11, 22%), and MDS (n=8, 16%). Graft sources were PBSC (n=40) or BM (n=9). Common conditioning regimens were Bu/Flu (83%) and TBI/Cy (12.2%). All subjects received standard tacrolimus/methotrexate for GvHD prophylaxis. One infusion reaction (Grade 2) was reported. Treatment-emergent adverse events (TEAE >5%) related to RGI-2001 were stomatitis 14%, diarrhea 12%, nausea 12%, abdominal pain 8%, increased bilirubin 8%, ALT enzyme elevation 6%, ALP elevation 6%, and rash 6%. Grade 3 or 4 related TEAE >2% were stomatitis (6%), anemia (4%), and leukopenia (4%). Per protocol, patients were followed for a maximum of 1 year. The median follow-up of 46 survivors was 363 days (range, 164-365), and 46 of 49 patients had complete follow-up to day 180.

Through day 100, there were 10 cases of grades II-IV aGvHD [20.4% (95% CI 10.2-34.3%)], two of which were grades III-IV [(4.1% (0.5-14.0%)). One subject died at day 102 from aGvHD due to GI bleeding, 2 subjects died without aGvHD (at days 100 and 127). Figure 1 shows outcomes involving aGvHD by donor. Day-180 estimates of overall survival (OS) and grades II-IV aGvHD-free survival (aGFS) were 93.9% (82.2-98.0%) and 75.5% (60.9-85.3%), respectively. Figure 2 summarizes the probability of OS and aGFS as a function of time.(Figure Presented)Conclusions: RGI-2001 added to the standard-of-care tacrolimus / methotrexate GvHD prophylaxis shows promising efficacy in the prevention of aGvHD for HLA-matched donors (related or unrelated) with an acceptable safety profile. A phase III study is planned.

Hematology-Oncology

Dimaano F, Schwartz T, Susick L, King E, Joliat C, Lehrberg A, Petersen L, and Bensenhaver J. Incidence of Positive Sentinel Lymph Node in cN0(f) Breast Cancer Patients After Neoadjuvant Chemotherapy: Opportunity to Defer Intraoperative Frozen Section Analysis. *Ann Surg Oncol* 2023; 30:S195. [Full Text](#)

F. Dimaano, Henry Ford Hospital, United States

INTRODUCTION: When NACT is utilized for breast cancer treatment, patients often undergo pretreatment axillary ultrasound with needle biopsy and clip placement . Standard of care surgical management after NACT includes SLN biopsy with intraoperative frozen section analysis, possible axillary lymph node dissection (ALND). Thorough evaluation of SLNs after NACT is imperative to assess for treatment effect which can affect adjuvant systemic and radiotherapy recommendations. We previously defined our institution's rate of ypN1(sn) in cN0 patients following NACT showing frozen section could be avoided in lieu of permanent pathology in hormone receptor (HR) neg/HER2 neg and HR neg/HER2 positive cases; however, due to axillary node needle biopsy false negative (FN) rates ranging from 7-30% in published data, we have continued to perform frozen section in cases with an ultrasound suspicious axillary node biopsied negative for metastasis (cN0(f)). We now aim to define the rate of ypN1(sn) in cN0(f) cases and the incidence of false negative axillary node biopsy in patients who received NACT. **METHODS:** Our IRB approved database was queried for cN0(f) cases undergoing NACT from 2016 to 2020, excluding cT4, stage IV, and those that left the system. Patient demographics, clinical characteristics, tumor biology (grade, receptor status, MIB1), and clinical/pathologic staging were recorded. We stratified by HR and HER2 status defined as: HR neg(0%), HR weakly pos(1-10%), HR pos(>11%), HER2 neg(0, 1+, 2+ neg by FISH), HER2 pos(3+, 2+ positive by FISH). **RESULTS:** Of the 29 cN0(f) cases, 5 cases were excluded by defined criteria leaving 24 for analysis. All 24 patients that presented as cN0(f) were found to be ypN0(sn) on final surgical pathology. Of these, 5(20.8%) were found to have SLN treatment effect, suggesting presence of missed metastatic disease prior to NACT; 4(80%) were HR neg/HER2 neg or HR weakly pos(≤10%)/ HER2 neg. **CONCLUSIONS:** Our results showed all 24(100%) cN0(f) cases were ypN0(sn) after NACT. Despite evidence of an axillary node core biopsy FN rate of 20.8% consistent with published data of 7-30%, 80% of the nodes with treatment effect had more aggressive tumor subtypes (HR neg/HER2 neg and HR weakly pos/HER2 neg). These results suggest that frozen section could be avoided at the time of surgery for cN0(f) cases after NACT in lieu of permanent pathology as the likelihood of finding ypN1(sn) is low, thus not requiring ALND.

Hematology-Oncology

Farhan S, Xie P, Neme MK, German A, Mikulandric N, Stephen MJ, Trapp MA, Henne E, Szymanski S, Rohrer S, Pelland D, Zagar N, Mazur I, Rida N, Patel K, Wu M, Kortam N, Yaseen A, Sweidan A, Emole J, Peres E, Abidi MH, and Ramesh M. A Single Institution Randomized Clinical Trial Evaluating Ciprofloxacin Versus Levofloxacin As Antibacterial Prophylaxis for Patients Receiving Hematopoietic Stem Cell Transplantation. *Transplant Cell Ther* 2023; 29(2):S319. [Full Text](#)

Bacterial infection is a serious complication of stem cell transplantation (SCT). However, the optimal oral agent for prophylaxis is uncertain. A BMTCTN survey by Rashidi et al previously reported the different practice patterns among SCT centers. Different antibiotics might affect incidence of blood stream infections, resistance, Clostridium difficile, gut microbiome, graft versus host disease (GVHD) and relapse differently. To explore this, we started a randomized clinical trial of levofloxacin (Levo) versus ciprofloxacin (Cipro) in SCT pre-engraftment. **Methods:** This is a single center prospective randomized

study NCT03850379. Patients who meet the SCT program criteria to undergo autologous or allogeneic SCT are eligible. Prophylaxis starts day-2 to engraftment. Results: Three hundred and seven consecutive patients were randomized between June 2018-May 2022. The median age at time of SCT was 63 years old (20-81), 55.7% males and 44.3% females. Caucasians were 62.5%, African Americans 29.7% and others 7.8%. One hundred and fifty-six (50.8%) patients were assigned to receive Cipro and 151 (49.2%) Levo. The 2 groups were balanced in regard to age, gender, ethnicity, type of SCT, disease type, and conditioning regimen intensity. One hundred and ninety-seven (64.2%) patients had autologous SCT (96 (61.5%) Cipro and 101 (66.9%) Levo) while 110 (35.8%) had allogeneic SCT (60 (38.4%) Cipro and 50 (33.1%) Levo). The time to neutrophil engraftment (median 11 days for both groups, $p=0.323$) and length of stay post stem cell infusion (median 13 days for both groups, $p=0.9164$) were not significantly different between the two groups. By day 60 post SCT, 61.2% of all patients developed fever, 11.7% found to have bacteremia and 7.3% pneumonia. In the Cipro group, 20 (12.8%) patients had bacteremia while in the Levo group 16 (10.6%) had bacteremia ($p=0.4407$). In the Cipro group, 6 (3.8%) patients had Gram negative bacteremia while in the Levo group 9 (6%) had gram negative bacteremia ($p=0.39$). In the Cipro group, 15 (9.6%) patients had gram positive bacteremia while in the Levo group, 9 (6%) patients had gram positive bacteremia ($p=0.23$). There were 7 (4.5%) of patients in the Cipro group with Enterococcus faecalis, 3 of which vancomycin resistant, compared to 4 (2.6%) patient in the Levo group, 3 of which vancomycin resistant, ($p=0.38$). In the Cipro group, 12 (7.7%) had Clostridium difficile while in the Levo group 8 (5.3%) had Clostridium difficile ($p=0.39$). In the cipro group 16 (10.3%) patients developed pneumonia compared to 6 (4%) patients in the Levo group ($p=0.0329$). There was no difference between the 2 groups in regard to intensive care admissions, relapse, GVHD or death. Conclusion: In this single center prospective randomized study, Levo prophylaxis was associated with significantly less pneumonia in the first 60 days post-SCT and supports Levo use if prophylaxis is to be used in the peri-transplant period

Hematology-Oncology

Nassif G, Tao M, Gartrelle K, Clark J, Langley K, Siddiqui F, Parikh P, Khan G, Philip P, Shah R, Steffes C, and Kwon D. Closing the Gap on Racial Disparities in Pancreas Cancer -the Impact of a Multidisciplinary Clinic for Surgical Patients with Pancreatic Adenocarcinoma (PDAC) in an Integrated, Tertiary Healthcare System. *Ann Surg Oncol* 2023; 30:S233. [Full Text](#)

G. Nassif, Henry Ford Health, United States

INTRODUCTION: Studies have highlighted disparate outcomes for African American (AA) patients undergoing treatment for PDAC. Tumor biology and social determinants of health are known to impact outcomes. However, the impact of multidisciplinary care is not well understood. We hypothesized that attending a single-day multidisciplinary clinic (MDC) consisting of access to medical, radiation, and surgical oncology, nurse navigation, and supportive services positively impacts outcomes of AA patients undergoing surgery for PDAC. **METHODS:** Retrospective analysis of patients with surgically resected PDAC was conducted between January 2013 and June 2022. Demographics, treatment modality, operative, and pathological features were compared between surgical patients evaluated in MDC to those that were not. Patients were stratified by race, and overall survival outcomes were compared. Kaplan-Meier and Cox regression models were utilized. **RESULTS:** 187 patients underwent surgery for PDAC between 2013 and 2022, of which 67.9% (N=127) were evaluated in MDC. AA patients constituted 19.7% of patients evaluated in MDC (25/127); there were 13 of 60 AA patients not evaluated in MDC. Patients evaluated in MDC were younger (63 vs. 67 yo, $p=0.016$), more likely to have their case discussed in tumor board ($p=0.044$), receive neoadjuvant therapy ($p=0.001$), and operated on by a fellowship-trained surgical oncologist ($p<0.001$). There were no differences in final pathologic stage, resection margin, LVI and perineural invasion; however, patients seen in MDC had lower positive lymph nodes ($p=0.026$). Median overall survival (OS) was higher in patients managed in MDC than those who were not (48 vs. 34.9 mo., $p=0.057$). There was no statistical significance in median OS between AA and non-AA patients who attended MDC (55.9 vs. 47 mo., $p=0.234$). **CONCLUSIONS:** Our data suggests that evaluation and management in an MDC confers a survival advantage for patients undergoing pancreas surgery for PDAC. Moreover, when introduced across a diverse patient population in an integrated health care system, MDC was shown to reduce the survival gap between AA and non-AA patients. For AA patients, this data suggests that perhaps overcoming certain social determinants of health and access may play a more significant role than underlying differences in tumor biology.

Hematology-Oncology

Wu M, Pichardo R, Vuyyala S, Emole J, Peres E, Abidi MH, Reddy M, and Farhan S. Modeling Risk of Atrial Fibrillation in Stem Cell Transplant. *Transplant Cell Ther* 2023; 29(2):S139-S140. [Full Text](#)

Development of Atrial fibrillation (AF) in patients undergoing hematopoietic stem cell transplant (HSCT) is associated with longer hospital stay, increased intensive care admission, and higher mortality within 1 year of HSCT (Tonorezos et al). Studies have reported clonal hematopoiesis, renal dysfunction, dilated left atrium (LA), hypertension (HTN), and left ventricular systolic dysfunction as risk factors for developing AF post-HSCT. Our aim is to find predictors of AF based on pre-HSCT clinical and echocardiographic parameters. Methods: This is a single center retrospective study, involving 748 consecutive patients undergoing autologous and allogeneic HSCT from 2012 to 2022. Patients' charts were reviewed to acquire clinical information (age, gender, HTN, body mass index [BMI], Obstructive sleep apnea [OSA]) and LA volume index was obtained from pre-HSCT echocardiogram. Results: For the 748 patients, the median age at HSCT was 61. Majority of patients were male (57%). Most common diagnoses were Myeloma (42.5%), acute leukemia (19.5%), lymphoma (19.5%), myelodysplastic syndromes and myeloproliferative neoplasms (11%). A total of 116 (15.5%) patients developed AF early post-HSCT. We found that compared to patients who did not develop AF early post HSCT, the AF patients had larger left atrial size, were significantly older, and were significantly more likely to have OSA. AF patients' mean LA measurement was 37.3ml/m², whereas non-AF patients' mean measure was 30.6ml/m² (P-value: 0.002). For age at HSCT, AF patients' mean was 62.4 years old and non-AF patients' mean was 57.4 years old (P-value: <0.001). OSA diagnosis, 39 (29.5%) of AF patients had OSA and 67 (11.3%) of non-AF patients had OSA (P-value: <0.001). In the multivariable regression analysis, larger LA size (P-value: 0.016), older age at HSCT (P-value: 0.001), and diagnosis of OSA (P-value: <0.001) were still significant predictors of AF. Male gender, HTN, BMI, and use of ATG or Melphalan based chemotherapies were not predictive of AF post-HSCT. Conclusion: In our single center retrospective study, we found diagnosis of OSA, older age at HSCT, and enlarged LA as significant predictors of AF early post-HSCT. A limitation of our study is the diagnosis of OSA, which sometimes was not supported with a sleep study or diagnosis came from an external practitioner. Further research is needed to develop a risk calculator to identify high risk patients and also study the effects of prophylactic therapies on the incidence of Post-HSCT AF.

Infectious Diseases

Farhan S, Xie P, Neme MK, German A, Mikulandric N, Stephen MJ, Trapp MA, Henne E, Szymanski S, Rohrer S, Pelland D, Zagar N, Mazur I, Rida N, Patel K, Wu M, Kortam N, Yaseen A, Sweidan A, Emole J, Peres E, Abidi MH, and Ramesh M. A Single Institution Randomized Clinical Trial Evaluating Ciprofloxacin Versus Levofloxacin As Antibacterial Prophylaxis for Patients Receiving Hematopoietic Stem Cell Transplantation. *Transplant Cell Ther* 2023; 29(2):S319. [Full Text](#)

Bacterial infection is a serious complication of stem cell transplantation (SCT). However, the optimal oral agent for prophylaxis is uncertain. A BMTCTN survey by Rashidi et al previously reported the different practice patterns among SCT centers. Different antibiotics might affect incidence of blood stream infections, resistance, Clostridium difficile, gut microbiome, graft versus host disease (GVHD) and relapse differently. To explore this, we started a randomized clinical trial of levofloxacin (Levo) versus ciprofloxacin (Cipro) in SCT pre-engraftment. Methods: This is a single center prospective randomized study NCT03850379. Patients who meet the SCT program criteria to undergo autologous or allogeneic SCT are eligible. Prophylaxis starts day-2 to engraftment. Results: Three hundred and seven consecutive patients were randomized between June 2018-May 2022. The median age at time of SCT was 63 years old (20-81), 55.7% males and 44.3% females. Caucasians were 62.5%, African Americans 29.7% and others 7.8%. One hundred and fifty-six (50.8%) patients were assigned to receive Cipro and 151 (49.2%) Levo. The 2 groups were balanced in regard to age, gender, ethnicity, type of SCT, disease type, and conditioning regimen intensity. One hundred and ninety-seven (64.2%) patients had autologous SCT (96 (61.5%) Cipro and 101 (66.9%) Levo) while 110 (35.8%) had allogeneic SCT (60 (38.4%) Cipro and 50 (33.1%) Levo). The time to neutrophil engraftment (median 11 days for both groups, p=0.323) and length of stay post stem cell infusion (median 13 days for both groups, p=0.9164) were not significantly different between the two groups. By day 60 post SCT, 61.2% of all patients developed fever, 11.7% found to have bacteremia and 7.3% pneumonia. In the Cipro group, 20 (12.8%) patients had bacteremia while in the

Levo group 16 (10.6%) had bacteremia ($p=0.4407$). In the Cipro group, 6 (3.8%) patients had Gram negative bacteremia while in the Levo group 9 (6%) had gram negative bacteremia ($p=0.39$). In the Cipro group, 15 (9.6%) patients had gram positive bacteremia while in the Levo group, 9 (6%) patients had gram positive bacteremia ($p=0.23$). There were 7 (4.5%) of patients in the Cipro group with *Enterococcus faecalis*, 3 of which vancomycin resistant, compared to 4 (2.6%) patient in the Levo group, 3 of which vancomycin resistant, ($p=0.38$). In the Cipro group, 12 (7.7%) had *Clostridium difficile* while in the Levo group 8 (5.3%) had *Clostridium difficile* ($p=0.39$). In the cipro group 16 (10.3%) patients developed pneumonia compared to 6 (4%) patients in the Levo group ($p=0.0329$). There was no difference between the 2 groups in regard to intensive care admissions, relapse, GVHD or death. Conclusion: In this single center prospective randomized study, Levo prophylaxis was associated with significantly less pneumonia in the first 60 days post-SCT and supports Levo use if prophylaxis is to be used in the peri-transplant period

Internal Medicine

Farhan S, Xie P, Neme MK, German A, Mikulandric N, Stephen MJ, Trapp MA, Henne E, Szymanski S, Rohrer S, Pelland D, Zagar N, Mazur I, Rida N, Patel K, Wu M, Kortam N, Yaseen A, Sweidan A, Emole J, Peres E, Abidi MH, and Ramesh M. A Single Institution Randomized Clinical Trial Evaluating Ciprofloxacin Versus Levofloxacin As Antibacterial Prophylaxis for Patients Receiving Hematopoietic Stem Cell Transplantation. *Transplant Cell Ther* 2023; 29(2):S319. [Full Text](#)

Bacterial infection is a serious complication of stem cell transplantation (SCT). However, the optimal oral agent for prophylaxis is uncertain. A BMTCTN survey by Rashidi et al previously reported the different practice patterns among SCT centers. Different antibiotics might affect incidence of blood stream infections, resistance, *Clostridium difficile*, gut microbiome, graft versus host disease (GVHD) and relapse differently. To explore this, we started a randomized clinical trial of levofloxacin (Levo) versus ciprofloxacin (Cipro) in SCT pre-engraftment. Methods: This is a single center prospective randomized study NCT03850379. Patients who meet the SCT program criteria to undergo autologous or allogeneic SCT are eligible. Prophylaxis starts day-2 to engraftment. Results: Three hundred and seven consecutive patients were randomized between June 2018-May 2022. The median age at time of SCT was 63 years old (20-81), 55.7% males and 44.3% females. Caucasians were 62.5%, African Americans 29.7% and others 7.8%. One hundred and fifty-six (50.8%) patients were assigned to receive Cipro and 151 (49.2%) Levo. The 2 groups were balanced in regard to age, gender, ethnicity, type of SCT, disease type, and conditioning regimen intensity. One hundred and ninety-seven (64.2%) patients had autologous SCT (96 (61.5%) Cipro and 101 (66.9%) Levo) while 110 (35.8%) had allogeneic SCT (60 (38.4%) Cipro and 50 (33.1%) Levo). The time to neutrophil engraftment (median 11 days for both groups, $p=0.323$) and length of stay post stem cell infusion (median 13 days for both groups, $p=0.9164$) were not significantly different between the two groups. By day 60 post SCT, 61.2% of all patients developed fever, 11.7% found to have bacteremia and 7.3% pneumonia. In the Cipro group, 20 (12.8%) patients had bacteremia while in the Levo group 16 (10.6%) had bacteremia ($p=0.4407$). In the Cipro group, 6 (3.8%) patients had Gram negative bacteremia while in the Levo group 9 (6%) had gram negative bacteremia ($p=0.39$). In the Cipro group, 15 (9.6%) patients had gram positive bacteremia while in the Levo group, 9 (6%) patients had gram positive bacteremia ($p=0.23$). There were 7 (4.5%) of patients in the Cipro group with *Enterococcus faecalis*, 3 of which vancomycin resistant, compared to 4 (2.6%) patient in the Levo group, 3 of which vancomycin resistant, ($p=0.38$). In the Cipro group, 12 (7.7%) had *Clostridium difficile* while in the Levo group 8 (5.3%) had *Clostridium difficile* ($p=0.39$). In the cipro group 16 (10.3%) patients developed pneumonia compared to 6 (4%) patients in the Levo group ($p=0.0329$). There was no difference between the 2 groups in regard to intensive care admissions, relapse, GVHD or death. Conclusion: In this single center prospective randomized study, Levo prophylaxis was associated with significantly less pneumonia in the first 60 days post-SCT and supports Levo use if prophylaxis is to be used in the peri-transplant period

Neurology

Rymer J, Okuka M, Borresen B, Xiaofang G, Yi Z, Alvero A, Rutherford TJ, and Anderson ML. Comprehensive Characterization of Endometrial and Endometrial Cancer Exosomes. *Reprod Sci* 2023; 30:145A. [Full Text](#)

M.L. Anderson, University of South Florida Morsani College of Medicine, Tampa, FL, United States

Introduction: Endometrial cancer (EC) is the most common malignancy diagnosed in the female reproductive tract. Exosomes are membrane-bound extracellular vesicles produced in the endosomal compartment of most cells. Exosomes released by endometrium have been implicated in the early steps of embryo implantation. However, their role in uterine cancer remains poorly understood. **Methods:** After obtaining IRB permission, specimens were collected from women undergoing clinically indicated surgery using a standardized protocol to gently lavage the endometrial cavity. Nanoparticles were isolated using Total Exosome Isolation Reagent (ThermoFisher). Particle size and structure were evaluated by transmission electron microscopy (TEM) and dynamic light scattering (DLS). Protein content was characterized by immunoblotting using commercially available antibodies for Hsp70, CD63, TSG101 and CD39. After isolating total RNA, patterns of non-coding RNA expression are profiled by NGS Sequencing (Novogene, Inc). **Results:** Uterine lavage specimens contained large number of nanoparticles characterized by bilaminar membranes typical of exosomes. These particles typically ranged in size between 50-100 microns, although subpopulations of both larger (>100 micron) and smaller particles were also identified. No differences in size or structure were observed when specimens recovered from women undergoing surgery for benign indications, endometrial intraepithelial neoplasia (EIN), G1-G2 or G3 endometrial adenocarcinoma (EC) or established endometrial cancer cell lines were compared (n=5 each). By Western blot, exosomes from all specimens were characterized by robust expression of CD63 and CD39. In contrast, robust TSG101 expression was observed in lavage specimens from G1/G2 and G3 endometrial cancer cases, sporadic specimens of healthy endometrium, but not established EC cell lines. HSP70 expression was observed in 3/6 EC specimens only. Electrophoresis indicates that RNA content of exosomes consists almost entirely of small (<50nt) transcripts. Patterns of non-coding RNA expression in exosomes distinguishing healthy endometrium, EIN and EC will be presented (n=8 each). **Conclusion:** The distinct composition of exosomes in lavage specimens suggests that exosome biogenesis in endometrial cancers differs from healthy endometrium and established EC cell lines. These differences may be useful for understanding EC pathogenesis, and developing less invasive approaches for its diagnosis.

Orthopedics/Bone and Joint Center

Rogers D, and Owczarek L. Running Up That Hill: A Case of Nighttime Arm Pain in a High School Cross-Country Runner. *Clin J Sport Med* 2023; 33(3):e73-e74. [Full Text](#)

D. Rogers, Henry Ford Health, Detroit, MI, United States

History: A 16 year-old male cross-country runner presents to the sports medicine clinic with right upper arm pain that began 10 months prior. No history of injury or traumatic event. Describes the pain as achy, present throughout the day, but it is much more significant at night and has been interfering with sleep. The pain has been stable since it's onset and is neither improving nor worsening. Lifting weights will mildly aggravate the pain. He has not tried any medications for treatment. He was evaluated at an urgent care shortly after the pain began. X-rays were performed that showed a periosteal reaction, and he was referred to our department. He denied any fever, chills, malaise, fatigue, weight loss. **Physical Exam:** Inspection: No erythema or lesion noted bilaterally. Palpation: Tenderness to palpation in the right mid-humerus. ROM: Full active ROM bilaterally. Muscle strength: 5/5 in biceps, triceps, and rotator cuff bilaterally. Pain reproduced with manual muscle testing of biceps, triceps, and rotator cuff on right side. **Neurovascular:** Intact, no deficits. **Differential Diagnosis:** 26. Ewing Sarcoma 27. Chronic Recurrent Multifocal Osteomyelitis 28. Osteoid Osteoma 29. Osteomyelitis 30. Stress Fracture **Test Results:** XR: Periosteal reaction of the mid shaft of the R humerus. MRI: Marked periosteal thickening and edema of the posteromedial aspect of the R humeral diaphysis. CT: Long segment of periosteal reaction surrounding the diaphysis of the humerus with thickening of the bone cortex. Bone Scan: Area of increased radiotracer uptake at the site of the periosteal reaction. No other lesions are noted. Path: Fragments of reactive woven bone with associated fibrosis and inflammation. Negative for malignancy. **Final Diagnosis:** Chronic Recurrent Multifocal Osteomyelitis (CRMO). **Discussion:** CRMO, also described in the literature as Chronic Non-bacterial Osteomyelitis (CNO), is a rare condition with reported prevalence of 0.4/100 000 worldwide. Typical presentation includes insidious onset nighttime bone pain with or without fevers, and 1 to 20 active bone lesions- most commonly affecting the metaphysis of long bones. Histologic hallmarks of this disease process are bone inflammation in the absence of infection or malignancy. NSAIDs are first line treatment, however some patients require methotrexate, TNF inhibitor

and/or bisphosphonate therapy. The IL-1 inhibitor, anakinra, has also been reported as a successful treatment option. Outcome: Our patient underwent a bone biopsy to rule out malignancy/infection and confirm the diagnosis of CRMO. Due to the rarity of this disease, a second opinion was obtained from an outside pathologist, who confirmed the diagnosis of CRMO. NSAID therapy was initiated with resolution of his pain. Follow-Up: Four weeks after bone biopsy he was cleared to return to running. He will be evaluated by rheumatology as approximately 25% of patients diagnosed with CRMO have an associated autoimmune disorder, including skin disorders and chronic inflammatory bowel disease. Due to an average reported remission rate of 40% (with common recurrence) he will be followed closely by orthopedic oncology.

Otolaryngology – Head and Neck Surgery

Hutchings HE, Enofe N, Brue K, **Tam S**, **Chang S**, **Wang A**, and **Okereke I**. Association of Social Determinants with Patient Reported Outcomes in Patients with Cancer. *Ann Surg Oncol* 2023; 30:S129. [Full Text](#)

H.E. Hutchings, Henry Ford Department of Surgery, United States

INTRODUCTION: Patient reported outcome (PRO) scores have been utilized more frequently, but the relationship of PRO scores to determinants of health and social inequities have not been widely studied. Our goal was to determine the association of PRO scores with social determinants at a single institution. **METHODS:** All patients with a new cancer diagnosis who completed a PRO survey from 2020 to 2022 were included. The PRO survey recorded scores for depression, fatigue, pain and physical condition ranging from 0 to 100 for each score. Higher depression, fatigue and pain scores indicated more distress. Higher physical condition scores indicated improved functionality. A summative score was calculated by adding scores for depression, fatigue, pain and 100-physical condition. A higher summative score indicated more distress. T-tests were used to compare scores between groups. **RESULTS:** A total of 1,090 patients were included. Female and minority patients represented 60.4 percent and 33.9 percent of the cohort respectively. Married patients had better individual and summative PRO scores (married sum score = 208.2 ± 37.7 vs. non-married sum score = 215.2 ± 37.3 , $p < 0.01$). Patients who were able to use the online portal to complete their survey also had better individual and summative scores (208.0 ± 35.6 vs. 226.2 ± 42.8 , $p < 0.01$). A negative correlation was observed between age at diagnosis and physical score, indicating worse functionality (Pearson $r = -0.156$, $p < 0.01$). Male patients (56.0 ± 11.1 vs. 54.5 ± 9.9 , $p = 0.04$) and minority patients (56.4 ± 10.4 vs. 54.4 ± 10.4 , $p = 0.01$) had worse pain scores than female and Caucasian patients respectively. Figure 1 shows scores based on primary tumor location. Patients with prostate cancer had the best summative scores (191.1 ± 33.5) while patients with gastrointestinal malignancies had the worst scores (221.5 ± 36.1). **CONCLUSIONS:** In our study, married patients and patients able to utilize the online portal had improved summative PRO scores. PRO scores also varied by primary cancer location. The level of social support may act in combination with specific patient/tumor factors to influence PRO scores. These findings present opportunities to address patient support at social and institutional levels.

Palliative Medicine

Zamamiri S, and **Henkin D**. A G-Tube Placed in the Side of Neck: Percutaneous Transesophageal Gastrostomy (PTEG) for Palliation of Malignant Bowel Obstruction (Sci201). *J Pain Symptom Manage* 2023; 65(5):e640. [Full Text](#)

Outcomes: 1. Participants will self-report the ability to utilize percutaneous transesophageal gastrostomy (PTEG) as a palliative treatment option for certain patients with malignant obstruction. 2. Participants will self-report the ability to recognize that PTEG can be as safe and effective as a traditional percutaneous gastrostomy tube. Malignant bowel obstructions may occur in certain advanced cancers, typically presenting with severe pain, intractable nausea, vomiting, or reflux that greatly impairs quality of life. Treatment options include surgical and nonsurgical interventions, such as opioid analgesics, steroids, and anti-secretory and anti-emetic medications, in combination, when feasible, with surgical bypass, luminal stenting, and/or a venting gastrostomy. Those with malignant bowel obstructions with peritoneal disease or malignant ascites are often precluded from interventions. We present an alternative intervention called percutaneous transesophageal gastrostomy (PTEG) that may be offered to patients when a traditional

percutaneous gastrostomy cannot be used. We describe a 57-year-old male with stage IV esophageal cancer complicated by peritoneal carcinomatosis and malignant ascites who presented with intractable nausea, vomiting, and reflux, diagnosed with malignant bowel obstruction. Multimodal medical therapies were trialed without relief, and he ultimately was left nasogastric tube (NGT) dependent. This form of gastric venting did adequately control his symptoms. He was not a candidate for other interventions, including a traditional palliative venting gastrostomy due to his peritoneal disease. With evidence that NGT with venting was the only helpful treatment, he underwent a successful PTEG placement by interventional radiology. He found near complete resolution in his obstructive symptoms as well as his throat and nose pain associated with the NGT were also eliminated. The application of the PTEG as a palliative intervention for malignant bowel obstruction is not widely recognized. This form of gastrostomy is effective for venting, feeding, or a combination of both, and is as safe when compared to a traditional gastrostomy. PTEG has been shown to improve quality of life and improve symptom burden when compared to NGT. We present this case to promote wider recognition of PTEG use for those patients who are ineligible for traditional interventions.

Pharmacy

Farhan S, Xie P, Neme MK, German A, Mikulandric N, Stephen MJ, Trapp MA, Henne E, Szymanski S, Rohrer S, Pelland D, Zagar N, Mazur I, Rida N, Patel K, Wu M, Kortam N, Yaseen A, Sweidan A, Emole J, Peres E, Abidi MH, and Ramesh M. A Single Institution Randomized Clinical Trial Evaluating Ciprofloxacin Versus Levofloxacin As Antibacterial Prophylaxis for Patients Receiving Hematopoietic Stem Cell Transplantation. *Transplant Cell Ther* 2023; 29(2):S319. [Full Text](#)

Bacterial infection is a serious complication of stem cell transplantation (SCT). However, the optimal oral agent for prophylaxis is uncertain. A BMTCTN survey by Rashidi et al previously reported the different practice patterns among SCT centers. Different antibiotics might affect incidence of blood stream infections, resistance, *Clostridium difficile*, gut microbiome, graft versus host disease (GVHD) and relapse differently. To explore this, we started a randomized clinical trial of levofloxacin (Levo) versus ciprofloxacin (Cipro) in SCT pre-engraftment. Methods: This is a single center prospective randomized study NCT03850379. Patients who meet the SCT program criteria to undergo autologous or allogeneic SCT are eligible. Prophylaxis starts day-2 to engraftment. Results: Three hundred and seven consecutive patients were randomized between June 2018-May 2022. The median age at time of SCT was 63 years old (20-81), 55.7% males and 44.3% females. Caucasians were 62.5%, African Americans 29.7% and others 7.8%. One hundred and fifty-six (50.8%) patients were assigned to receive Cipro and 151 (49.2%) Levo. The 2 groups were balanced in regard to age, gender, ethnicity, type of SCT, disease type, and conditioning regimen intensity. One hundred and ninety-seven (64.2%) patients had autologous SCT (96 (61.5%) Cipro and 101 (66.9%) Levo) while 110 (35.8%) had allogeneic SCT (60 (38.4%) Cipro and 50 (33.1%) Levo). The time to neutrophil engraftment (median 11 days for both groups, $p=0.323$) and length of stay post stem cell infusion (median 13 days for both groups, $p=0.9164$) were not significantly different between the two groups. By day 60 post SCT, 61.2% of all patients developed fever, 11.7% found to have bacteremia and 7.3% pneumonia. In the Cipro group, 20 (12.8%) patients had bacteremia while in the Levo group 16 (10.6%) had bacteremia ($p=0.4407$). In the Cipro group, 6 (3.8%) patients had Gram negative bacteremia while in the Levo group 9 (6%) had gram negative bacteremia ($p=0.39$). In the Cipro group, 15 (9.6%) patients had gram positive bacteremia while in the Levo group, 9 (6%) patients had gram positive bacteremia ($p=0.23$). There were 7 (4.5%) of patients in the Cipro group with *Enterococcus faecalis*, 3 of which vancomycin resistant, compared to 4 (2.6%) patient in the Levo group, 3 of which vancomycin resistant, ($p=0.38$). In the Cipro group, 12 (7.7%) had *Clostridium difficile* while in the Levo group 8 (5.3%) had *Clostridium difficile* ($p=0.39$). In the cipro group 16 (10.3%) patients developed pneumonia compared to 6 (4%) patients in the Levo group ($p=0.0329$). There was no difference between the 2 groups in regard to intensive care admissions, relapse, GVHD or death. Conclusion: In this single center prospective randomized study, Levo prophylaxis was associated with significantly less pneumonia in the first 60 days post-SCT and supports Levo use if prophylaxis is to be used in the peri-transplant period

Public Health Sciences

Dimaano F, Schwartz T, Susick L, King E, Joliat C, Lehrberg A, Petersen L, and Bensenhaver J. Incidence of Positive Sentinel Lymph Node in cN0(f) Breast Cancer Patients After Neoadjuvant

Chemotherapy: Opportunity to Defer Intraoperative Frozen Section Analysis. *Ann Surg Oncol* 2023; 30:S195. [Full Text](#)

F. Dimaano, Henry Ford Hospital, United States

INTRODUCTION: When NACT is utilized for breast cancer treatment, patients often undergo pretreatment axillary ultrasound with needle biopsy and clip placement. Standard of care surgical management after NACT includes SLN biopsy with intraoperative frozen section analysis, possible axillary lymph node dissection (ALND). Thorough evaluation of SLNs after NACT is imperative to assess for treatment effect which can affect adjuvant systemic and radiotherapy recommendations. We previously defined our institution's rate of ypN1(sn) in cN0 patients following NACT showing frozen section could be avoided in lieu of permanent pathology in hormone receptor (HR) neg/HER2 neg and HR neg/HER2 positive cases; however, due to axillary node needle biopsy false negative (FN) rates ranging from 7-30% in published data, we have continued to perform frozen section in cases with an ultrasound suspicious axillary node biopsied negative for metastasis (cN0(f)). We now aim to define the rate of ypN1(sn) in cN0(f) cases and the incidence of false negative axillary node biopsy in patients who received NACT. **METHODS:** Our IRB approved database was queried for cN0(f) cases undergoing NACT from 2016 to 2020, excluding cT4, stage IV, and those that left the system. Patient demographics, clinical characteristics, tumor biology (grade, receptor status, MIB1), and clinical/pathologic staging were recorded. We stratified by HR and HER2 status defined as: HR neg(0%), HR weakly pos(1-10%), HR pos(>11%), HER2 neg(0, 1+, 2+ neg by FISH), HER2 pos(3+, 2+ positive by FISH). **RESULTS:** Of the 29 cN0(f) cases, 5 cases were excluded by defined criteria leaving 24 for analysis. All 24 patients that presented as cN0(f) were found to be ypN0(sn) on final surgical pathology. Of these, 5(20.8%) were found to have SLN treatment effect, suggesting presence of missed metastatic disease prior to NACT; 4(80%) were HR neg/HER2 neg or HR weakly pos($\leq 10\%$)/ HER2 neg. **CONCLUSIONS:** Our results showed all 24(100%) cN0(f) cases were ypN0(sn) after NACT. Despite evidence of an axillary node core biopsy FN rate of 20.8% consistent with published data of 7-30%, 80% of the nodes with treatment effect had more aggressive tumor subtypes (HR neg/HER2 neg and HR weakly pos/HER2 neg). These results suggest that frozen section could be avoided at the time of surgery for cN0(f) cases after NACT in lieu of permanent pathology as the likelihood of finding ypN1(sn) is low, thus not requiring ALND.

Public Health Sciences

Hutchings HE, Enofe N, Brue K, **Tam S**, **Chang S**, **Wang A**, and **Okereke I**. Association of Social Determinants with Patient Reported Outcomes in Patients with Cancer. *Ann Surg Oncol* 2023; 30:S129. [Full Text](#)

H.E. Hutchings, Henry Ford Department of Surgery, United States

INTRODUCTION: Patient reported outcome (PRO) scores have been utilized more frequently, but the relationship of PRO scores to determinants of health and social inequities have not been widely studied. Our goal was to determine the association of PRO scores with social determinants at a single institution. **METHODS:** All patients with a new cancer diagnosis who completed a PRO survey from 2020 to 2022 were included. The PRO survey recorded scores for depression, fatigue, pain and physical condition ranging from 0 to 100 for each score. Higher depression, fatigue and pain scores indicated more distress. Higher physical condition scores indicated improved functionality. A summative score was calculated by adding scores for depression, fatigue, pain and 100-physical condition. A higher summative score indicated more distress. T-tests were used to compare scores between groups. **RESULTS:** A total of 1,090 patients were included. Female and minority patients represented 60.4 percent and 33.9 percent of the cohort respectively. Married patients had better individual and summative PRO scores (married sum score = 208.2 ± 37.7 vs. non-married sum score = 215.2 ± 37.3 , $p < 0.01$). Patients who were able to use the online portal to complete their survey also had better individual and summative scores (208.0 ± 35.6 vs. 226.2 ± 42.8 , $p < 0.01$). A negative correlation was observed between age at diagnosis and physical score, indicating worse functionality (Pearson $r = -0.156$, $p < 0.01$). Male patients (56.0 ± 11.1 vs. 54.5 ± 9.9 , $p = 0.04$) and minority patients (56.4 ± 10.4 vs. 54.4 ± 10.4 , $p = 0.01$) had worse pain scores than female and Caucasian patients respectively. Figure 1 shows scores based on primary tumor location. Patients with prostate cancer had the best summative scores (191.1 ± 33.5) while patients with

gastrointestinal malignancies had the worst scores (221.5 ± 36.1). CONCLUSIONS: In our study, married patients and patients able to utilize the online portal had improved summative PRO scores. PRO scores also varied by primary cancer location. The level of social support may act in combination with specific patient/tumor factors to influence PRO scores. These findings present opportunities to address patient support at social and institutional levels.

Public Health Sciences

Nassif G, Tao M, Gartrelle K, Clark J, Langley K, Siddiqui F, Parikh P, Khan G, Philip P, Shah R, Steffes C, and Kwon D. Closing the Gap on Racial Disparities in Pancreas Cancer -the Impact of a Multidisciplinary Clinic for Surgical Patients with Pancreatic Adenocarcinoma (PDAC) in an Integrated, Tertiary Healthcare System. *Ann Surg Oncol* 2023; 30:S233. [Full Text](#)

G. Nassif, Henry Ford Health, United States

INTRODUCTION: Studies have highlighted disparate outcomes for African American (AA) patients undergoing treatment for PDAC. Tumor biology and social determinants of health are known to impact outcomes. However, the impact of multidisciplinary care is not well understood. We hypothesized that attending a single-day multidisciplinary clinic (MDC) consisting of access to medical, radiation, and surgical oncology, nurse navigation, and supportive services positively impacts outcomes of AA patients undergoing surgery for PDAC. METHODS: Retrospective analysis of patients with surgically resected PDAC was conducted between January 2013 and June 2022. Demographics, treatment modality, operative, and pathological features were compared between surgical patients evaluated in MDC to those that were not. Patients were stratified by race, and overall survival outcomes were compared. Kaplan-Meier and Cox regression models were utilized. RESULTS: 187 patients underwent surgery for PDAC between 2013 and 2022, of which 67.9% (N=127) were evaluated in MDC. AA patients constituted 19.7% of patients evaluated in MDC (25/127); there were 13 of 60 AA patients not evaluated in MDC. Patients evaluated in MDC were younger (63 vs. 67 yo, $p=0.016$), more likely to have their case discussed in tumor board ($p=0.044$), receive neoadjuvant therapy ($p=0.001$), and operated on by a fellowship-trained surgical oncologist ($p<0.001$). There were no differences in final pathologic stage, resection margin, LVI and perineural invasion; however, patients seen in MDC had lower positive lymph nodes ($p=0.026$). Median overall survival (OS) was higher in patients managed in MDC than those who were not (48 vs. 34.9 mo., $p=0.057$). There was no statistical significance in median OS between AA and non-AA patients who attended MDC (55.9 vs. 47 mo., $p=0.234$). CONCLUSIONS: Our data suggests that evaluation and management in an MDC confers a survival advantage for patients undergoing pancreas surgery for PDAC. Moreover, when introduced across a diverse patient population in an integrated health care system, MDC was shown to reduce the survival gap between AA and non-AA patients. For AA patients, this data suggests that perhaps overcoming certain social determinants of health and access may play a more significant role than underlying differences in tumor biology.

Radiation Oncology

Nassif G, Tao M, Gartrelle K, Clark J, Langley K, Siddiqui F, Parikh P, Khan G, Philip P, Shah R, Steffes C, and Kwon D. Closing the Gap on Racial Disparities in Pancreas Cancer -the Impact of a Multidisciplinary Clinic for Surgical Patients with Pancreatic Adenocarcinoma (PDAC) in an Integrated, Tertiary Healthcare System. *Ann Surg Oncol* 2023; 30:S233. [Full Text](#)

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Research Administration

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Surgery

Bath J, D'Oria M, Rogers RT, Colglazier JJ, Braet DJ, Coleman DM, Scali ST, Back MR, Magee GA, Plotkin A, Dueppers P, Zimmermann A, Afifi RO, Khan S, Zarkowsky D, Dyba G, Soult MC, Mani K, Wanhainen A, Setacci C, Lenti M, **Kabbani LS, Weaver MR**, Bissacco D, Trimarchi S, Stoecker JB, Wang GJ, Szeberin Z, Pomozi E, Moffatt C, Gelabert HA, Tish S, Hoel AW, Cortolillo NS, Spangler EL, Passman MA, De Caridi G, Benedetto F, Zhou W, Abuhakmeh Y, Newton DH, Liu CM, Tinelli G, Tshomba Y, Katoh A, Siada SS, Khashram M, Gormley S, Mullins JR, Schmittling ZC, Maldonado TS,

Politano AD, Rynio P, Kazimierczak A, Gombert A, Jalaie H, Spath P, Gallitto E, Czerny M, Berger T, Davies MG, Stilo F, Montelione N, Mezzetto L, Veraldi GF, Lepidi S, Lawrence P, and Woo K. Contemporary outcomes after treatment of aberrant subclavian artery and Kommerell's diverticulum: Presented at the Society for Vascular Surgery Vascular Annual Meeting, Boston, Massachusetts, June 15-18, 2022. *Eur J Vasc Endovasc Surg* 2023; 65(5):e56-e57. [Full Text](#)

J. Bath, Division of Vascular Surgery, University of Missouri, Columbia, MO

Objective: Aberrant subclavian artery (ASA) and Kommerell's diverticulum (KD) are rare vascular anomalies that may be associated with lifestyle-limiting and life-threatening complications. The aim of this study is to report contemporary outcomes after invasive treatment of ASA/KD using a large international dataset. **Methods:** Patients who underwent treatment for ASA/KD (2000-2020) were identified through the Vascular Low Frequency Disease Consortium, a multi-institutional collaboration to investigate uncommon vascular disorders. We report the early and mid-term clinical outcomes including stroke and mortality, technical success, and other operative outcomes including reintervention rates, patency, and endoleak. **Results:** Overall, 285 patients were identified during the study period. The mean patient age was 57 years; 47% were female and 68% presented with symptoms. A right-sided arch was present in 23%. The mean KD diameter was 47.4 mm (range, 13.0-108.0 mm). The most common indication for treatment was symptoms (59%), followed by aneurysm size (38%). The most common symptom reported was dysphagia (44%). A ruptured KD was treated in 4.2% of cases, with a mean diameter of 43.9 mm (range, 18.0-100.0 mm). An open procedure was performed in 101 cases (36%); the most common approach was ASA ligation with subclavian transposition. An endovascular or hybrid approach was performed in 184 patients (64%); the most common approach was thoracic endograft and carotid-subclavian bypass. A staged operative strategy was employed more often than single setting repair (55% vs 45%). Compared with endovascular or hybrid approach, those in the open procedure group were more likely to be younger (49 years vs 61 years; $P < .0001$), female (64% vs 36%; $P < .0001$), and symptomatic (85% vs 59%; $P < .0001$). Complete or partial symptomatic relief at 1 year after intervention was 82.6%. There was no association between modality of treatment and symptom relief (open 87.2% vs endovascular or hybrid approach 78.9%; $P = .13$). After the intervention, 11 subclavian occlusions (4.5%) occurred; 3 were successfully thrombectomized resulting in a primary and secondary patency of 95% and 96%, respectively, at a median follow-up of 39 months. Among the 33 reinterventions (12%), the majority were performed for endoleak (36%), and more reinterventions occurred in the endovascular or hybrid approach than open procedure group (15% vs 6%; $P = .02$). The overall survival rate was 87.3% at a median follow-up of 41 months. The 30-day stroke and death rates were 4.2% and 4.9%, respectively. Urgent or emergent presentation was independently associated with increased risk of 30-day mortality (odds ratio [OR], 19.8; 95% confidence interval [CI], 3.3-116.6), overall mortality (OR, 3.6; 95% CI, 1.2-11.2) and intraoperative complications (OR, 8.3; 95% CI, 2.8-25.1). Females had a higher risk of reintervention (OR, 2.6; 95% CI, 1.0-6.5). At an aneurysm size of 44.4 mm, receiver operator characteristic curve analysis suggested that 60% of patients would have symptoms. **Conclusions:** Treatment of ASA/KD can be performed safely with low rates of mortality, stroke and reintervention and high rates of symptomatic relief, regardless of the repair strategy. Symptomatic and urgent operations were associated with worse outcomes in general, and female gender was associated with a higher likelihood of reintervention. Given the worse overall outcomes when symptomatic and the inherent risk of rupture, consideration of repair at 40 mm is reasonable in most patients. ASA/KD can be repaired in asymptomatic patients with excellent outcomes and young healthy patients may be considered better candidates for open approaches versus endovascular or hybrid modalities, given the lower likelihood of reintervention and lower early mortality rate. **Keywords:** Kommerell's diverticulum, Aberrant subclavian artery

Surgery

Dandu C, Dobesh K, Yorks A, Shepard AD, Weaver M, Lee A, Peshkepija A, Onofrey K, Kavousi Y, Nypaver TJ, and Kabbani LS. Single-center Experience with JETi Hydrodynamic Thrombectomy System for Arterial Occlusions of the Extremities. *J Vasc Surg* 2023; 77(6):e197-e198. [Full Text](#)

Objectives: Percutaneous aspiration thrombectomy is a new modality for treating patients with acute limb ischemia (ALI). We report our experience and outcomes using the JETi hydrodynamic thrombectomy system (Abbott Vascular, Abbott Park, IL) to treat acute arterial occlusions of the extremities. **Methods:**

This a single-center retrospective review of patients with acute occlusions of peripheral arteries or grafts treated with the JETi from September 2020 to December 2022. JETi was used either as primary intervention or as an adjunct to treat distal vessel thrombus after proximal open thrombectomy. The primary outcome for success was defined as >50% luminal opening post-intervention. Indications, limb salvage, and major adverse events were reviewed. Results: The JETi was used in 59 procedures (56 acute lower extremity ischemia [ALEI], three acute upper extremity ischemia [AUEI]) to treat 124 arteries in 57 patients. Mean age was 62 years (range, 29-95 years), and 49% were male. The mean duration of symptoms before hospitalization was 4.8 days (range, 0 hours to 21 days) for ALEI. The primary outcome was achieved in 102 of 124 (83%) arteries by JETi alone. Additional modalities including open thrombectomy, angioplasty, and stenting were used in five arteries to achieve the primary outcome. Seventeen arteries failed to achieve primary outcome with JETi with or without an adjunct. Reasons for failure were attributed to small artery size and chronic nature of the clot. Complete luminal patency with JETi thrombectomy alone was achieved in 52 arteries (42%). Additionally, 55 arteries underwent additional procedures (angioplasty and stenting) to restore complete luminal patency, which was successfully achieved in 49 vessels (89%) (Table). Average estimated blood loss in JETi-only procedures was 335 mL and 384 mL in those who underwent adjunctive procedures to achieve the primary outcome. Complications included distal embolization (5), access site hematoma (3), and acute kidney injury (AKI) (8). Two AKIs were attributed to rhabdomyolysis with creatine phosphokinase >10,000 IU/L; none of whom needed dialysis. There was a single 30-day mortality. Six patients required major limb amputations within 30 days – two after unsuccessful recanalization and one each for severe gangrene despite restoration of in-line flow, reocclusion of a distal bypass graft, recurrent ALEI postoperative day 15 with non-viable muscle on exploration, and a delayed compartment syndrome diagnosis. Conclusions: Success of the JETi to remove the targeted clot was 83%. The JETi system is an efficacious and safe tool for use in the treatment of acute artery occlusion. [Formula presented]

Surgery

Dimaano F, Schwartz T, Susick L, King E, Joliat C, Lehrberg A, Petersen L, and Bensenhaver J. Incidence of Positive Sentinel Lymph Node in cN0(f) Breast Cancer Patients After Neoadjuvant Chemotherapy: Opportunity to Defer Intraoperative Frozen Section Analysis. *Ann Surg Oncol* 2023; 30:S195. [Full Text](#)

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Surgery

Dobesh K, Dandu C, Weaver M, Onofrey K, Miletic K, Nypaver TJ, and Kabbani LS. Short-Term Follow-up of Endovascular Electrocautery Septostomy and Fenestration for Distal Landing Zone Optimization in Chronic Distal Aortic Dissections. *J Vasc Surg* 2023; 77(6):e257-e258. [Full Text](#)

Objectives: Endovascular repair of postdissection thoracic aneurysms remains challenging due to false lumen perfusion. Landing the endograft into the true lumen renders the repair prone to false lumen perfusion through fenestrations beyond to the distal landing zone. Fenestration of the septum creating a single lumen at the distal landing zone is one possible strategy to eliminate false lumen perfusion. We describe our experience with endovascular electrocautery septostomy and fenestration. **Methods:** Patients with chronic distal aortic dissection who underwent endovascular electrocautery septostomy and fenestration followed by thoracic endovascular aneurysm repair were reviewed. The dissections were either a chronic type B dissection or a chronic residual type A dissection after proximal repair. Patient demographics, history, aortic characteristics, operative, and postoperative variables were collected. **Results:** Between 2019 and 2022, 13 patients underwent thoracic endovascular aneurysm repair with endovascular electrocautery fenestration of the distal dissection flap to facilitate the distal seal. The average age was 60 years and 11 (85%) were men. The descending thoracic aneurysm was secondary to chronic residual dissection after prior type A repair in 11 (85%) and chronic type B dissections in 2 (15%). Median time from the initial dissection was 3.6 years. Initial technical success was achieved in 12 of 13 cases (Figures 1 and 2). Average fluoroscopy time was 57.5 minutes. One patient had a persistent type Ib endoleak after the graft failed to fully expand, despite fenestration, and underwent coiling of the false lumen. Median follow-up was 7 months. Two patients developed distal aortic aneurysmal degeneration and underwent distal extension of the endograft with endoanchors. Mean time to degeneration was 41.5 weeks. Average decrease in aneurysm size since operation was 5 mm. No patient required an open operation. **Conclusions:** Endovascular electrocautery fenestration is a useful strategy for creating a distal landing zone in chronic descending aortic dissections. Longer term follow-up is needed to determine the longevity of the distal seal aided by septal fenestration.

Surgery

Dobesh K, Kadiyala D, Shepard AD, Onofrey K, Lee A, Peshkepija A, Nypaver TJ, and Kabbani LS. Acute Limb Ischemia: Patient-reported Quality of Life and Ambulation Outcomes. *J Vasc Surg* 2023; 77(6):e195. [Full Text](#)

Objectives: There are few studies describing quality of life (QoL) and ambulation status after acute limb ischemia (ALI). We used a vascular disease-specific questionnaire (VascuQoL-6) and a generic quality of life assessment (European Quality of Life 5D-5L [EQ-5D]) to assess these outcomes. **Methods:** Using a prospectively collected, single-institution ALI database, the EQ-5D and VascuQoL-6 surveys were administered. Patient demographics, medical history, inpatient variables, outcomes, and ambulatory functional status at last follow-up were collected. Univariate analyses were used to correlate the VascuQoL-6 composite score and the EQ-5D index score with the collected variables. **Results:** Between May 2016 and February 2022, 234 patients were entered into the database; of these, 40 responded to our surveys (17%). Average age was 59 years, 55% were male, and 45% were Black. Rutherford class on presentation was 1 in 10 patients, 2a in 11 patients, 2b in 17 patients, and 3 in two patients. Three patients underwent medical management only, four patients had a primary amputation, 10 patients underwent endovascular revascularization, and 22 patients underwent an open revascularization. At 30 days, 93% of patients (37/40) had limb salvage; however, by 1 year, this decreased to 60% (22/37). Functional status at last follow-up (mean, 15-18 months) included 23 patients with normal ambulation, 10 patients with partially limited ambulation (neurological deficit or chronic pain), five ambulatory on prosthetics after amputation, and two non-ambulatory after amputation. Average VascuQoL-6 score was 16.8 (of a max of 24) for normal ambulation, 13.8 for partially limited ambulation, and 15.8 for prosthetic ambulation after amputation (P-value = .223). The VascuQoL-6 composite score was associated with age (inversely correlated; P < .001) and EQ-5D score (P < .001) only. The EQ-5D was also significant for age (inversely correlated; P = .032) and VascuQoL-6 composite score (P < .001), whereas ambulatory

functional status approached significance ($P = .079$). Rutherford classification, etiology, type of revascularization, length of stay, limb salvage, and functional ambulatory status did not correlate with QoL outcomes on either assessment. Conclusions: When comparing QoL after acute limb ischemia, younger patients had worse functional outcomes. There was no statistically significant difference in QoL for presenting Rutherford classification, limb salvage, type of revascularization, or functional ambulatory status. [Formula presented] [Formula presented]

Surgery

Farhan S, Xie P, Neme MK, German A, Mikulandric N, Stephen MJ, Trapp MA, Henne E, Szymanski S, Rohrer S, Pelland D, Zagar N, Mazur I, Rida N, Patel K, Wu M, Kortam N, Yaseen A, Sweidan A, Emole J, Peres E, Abidi MH, and Ramesh M. A Single Institution Randomized Clinical Trial Evaluating Ciprofloxacin Versus Levofloxacin As Antibacterial Prophylaxis for Patients Receiving Hematopoietic Stem Cell Transplantation. *Transplant Cell Ther* 2023; 29(2):S319. [Full Text](#)

Bacterial infection is a serious complication of stem cell transplantation (SCT). However, the optimal oral agent for prophylaxis is uncertain. A BMTCTN survey by Rashidi et al previously reported the different practice patterns among SCT centers. Different antibiotics might affect incidence of blood stream infections, resistance, Clostridium difficile, gut microbiome, graft versus host disease (GVHD) and relapse differently. To explore this, we started a randomized clinical trial of levofloxacin (Levo) versus ciprofloxacin (Cipro) in SCT pre-engraftment. Methods: This is a single center prospective randomized study NCT03850379. Patients who meet the SCT program criteria to undergo autologous or allogeneic SCT are eligible. Prophylaxis starts day-2 to engraftment. Results: Three hundred and seven consecutive patients were randomized between June 2018-May 2022. The median age at time of SCT was 63 years old (20-81), 55.7% males and 44.3% females. Caucasians were 62.5%, African Americans 29.7% and others 7.8%. One hundred and fifty-six (50.8%) patients were assigned to receive Cipro and 151 (49.2%) Levo. The 2 groups were balanced in regard to age, gender, ethnicity, type of SCT, disease type, and conditioning regimen intensity. One hundred and ninety-seven (64.2%) patients had autologous SCT (96 (61.5%) Cipro and 101 (66.9%) Levo) while 110 (35.8%) had allogeneic SCT (60 (38.4%) Cipro and 50 (33.1%) Levo). The time to neutrophil engraftment (median 11 days for both groups, $p=0.323$) and length of stay post stem cell infusion (median 13 days for both groups, $p=0.9164$) were not significantly different between the two groups. By day 60 post SCT, 61.2% of all patients developed fever, 11.7% found to have bacteremia and 7.3% pneumonia. In the Cipro group, 20 (12.8%) patients had bacteremia while in the Levo group 16 (10.6%) had bacteremia ($p=0.4407$). In the Cipro group, 6 (3.8%) patients had Gram negative bacteremia while in the Levo group 9 (6%) had gram negative bacteremia ($p=0.39$). In the Cipro group, 15 (9.6%) patients had gram positive bacteremia while in the Levo group, 9 (6%) patients had gram positive bacteremia ($p=0.23$). There were 7 (4.5%) of patients in the Cipro group with Enterococcus faecalis, 3 of which vancomycin resistant, compared to 4 (2.6%) patient in the Levo group, 3 of which vancomycin resistant, ($p=0.38$). In the Cipro group, 12 (7.7%) had Clostridium difficile while in the Levo group 8 (5.3%) had Clostridium difficile ($p=0.39$). In the cipro group 16 (10.3%) patients developed pneumonia compared to 6 (4%) patients in the Levo group ($p=0.0329$). There was no difference between the 2 groups in regard to intensive care admissions, relapse, GVHD or death. Conclusion: In this single center prospective randomized study, Levo prophylaxis was associated with significantly less pneumonia in the first 60 days post-SCT and supports Levo use if prophylaxis is to be used in the peri-transplant period

Surgery

Hutchings HE, Enofe N, Brue K, Tam S, Chang S, Wang A, and Okereke I. Association of Social Determinants with Patient Reported Outcomes in Patients with Cancer. *Ann Surg Oncol* 2023; 30:S129. [Full Text](#)

H.E. Hutchings, Henry Ford Department of Surgery, United States

INTRODUCTION: Patient reported outcome (PRO) scores have been utilized more frequently, but the relationship of PRO scores to determinants of health and social inequities have not been widely studied. Our goal was to determine the association of PRO scores with social determinants at a single institution. **METHODS:** All patients with a new cancer diagnosis who completed a PRO survey from 2020 to 2022 were included. The PRO survey recorded scores for depression, fatigue, pain and physical condition

ranging from 0 to 100 for each score. Higher depression, fatigue and pain scores indicated more distress. Higher physical condition scores indicated improved functionality. A summative score was calculated by adding scores for depression, fatigue, pain and 100-physical condition. A higher summative score indicated more distress. T-tests were used to compare scores between groups. RESULTS: A total of 1,090 patients were included. Female and minority patients represented 60.4 percent and 33.9 percent of the cohort respectively. Married patients had better individual and summative PRO scores (married sum score = 208.2 ± 37.7 vs. non-married sum score = 215.2 ± 37.3 , $p < 0.01$). Patients who were able to use the online portal to complete their survey also had better individual and summative scores (208.0 ± 35.6 vs. 226.2 ± 42.8 , $p < 0.01$). A negative correlation was observed between age at diagnosis and physical score, indicating worse functionality (Pearson $r = -0.156$, $p < 0.01$). Male patients (56.0 ± 11.1 vs. 54.5 ± 9.9 , $p = 0.04$) and minority patients (56.4 ± 10.4 vs. 54.4 ± 10.4 , $p = 0.01$) had worse pain scores than female and Caucasian patients respectively. Figure 1 shows scores based on primary tumor location. Patients with prostate cancer had the best summative scores (191.1 ± 33.5) while patients with gastrointestinal malignancies had the worst scores (221.5 ± 36.1). CONCLUSIONS: In our study, married patients and patients able to utilize the online portal had improved summative PRO scores. PRO scores also varied by primary cancer location. The level of social support may act in combination with specific patient/tumor factors to influence PRO scores. These findings present opportunities to address patient support at social and institutional levels.

Surgery

Kabbani L, Eng M, Onofrey K, Weaver M, and Nypaver T. Novel technique to fenestrate an aortic dissection flap using electrocautery. *J Vasc Surg Cases Innov Tech* 2023; 9(2). [Full Text](#)

L. Kabbani, Henry Ford Hospital, 2799 West Grand BLVD, Detroit, MI, United States

Chronic distal thoracic dissections treated with thoracic endovascular repair are prone to type Ib false lumen perfusion. When the supraceliac aorta is of normal caliber, fenestration of the dissection flap proximal to the visceral vessels creates a seal zone for the thoracic stent graft and eliminates the type Ib false lumen perfusion. We describe a novel way of crossing the septum using electrocautery delivered through a wire tip then fenestrating the septum using electrocautery delivered over a 1-mm area of uninsulated wire to cut the septum. We believe the use of electrocautery creates a controlled and deliberate aortic fenestration during endovascular repair of a distal thoracic dissections.

Surgery

Lu AK, Hans S, and Nahirniak P. Sartorius Myoplasty for Exposed Composite Graft in the Groin. *J Vasc Surg* 2023; 77(6):e69. [Full Text](#)

Objective: Patient with repair of left femoral anastomotic aneurysm who developed a nonhealing wound with exposed prosthetic graft. Sartorius muscle flap was performed for coverage of graft and to promote wound healing.

Surgery

Nassif G, Tao M, Gartrelle K, Clark J, Langley K, Siddiqui F, Parikh P, Khan G, Philip P, Shah R, Steffes C, and Kwon D. Closing the Gap on Racial Disparities in Pancreas Cancer -the Impact of a Multidisciplinary Clinic for Surgical Patients with Pancreatic Adenocarcinoma (PDAC) in an Integrated, Tertiary Healthcare System. *Ann Surg Oncol* 2023; 30:S233. [Full Text](#)

G. Nassif, Henry Ford Health, United States

INTRODUCTION: Studies have highlighted disparate outcomes for African American (AA) patients undergoing treatment for PDAC. Tumor biology and social determinants of health are known to impact outcomes. However, the impact of multidisciplinary care is not well understood. We hypothesized that attending a single-day multidisciplinary clinic (MDC) consisting of access to medical, radiation, and surgical oncology, nurse navigation, and supportive services positively impacts outcomes of AA patients undergoing surgery for PDAC. METHODS: Retrospective analysis of patients with surgically resected PDAC was conducted between January 2013 and June 2022. Demographics, treatment modality,

operative, and pathological features were compared between surgical patients evaluated in MDC to those that were not. Patients were stratified by race, and overall survival outcomes were compared. Kaplan-Meier and Cox regression models were utilized. RESULTS: 187 patients underwent surgery for PDAC between 2013 and 2022, of which 67.9% (N=127) were evaluated in MDC. AA patients constituted 19.7% of patients evaluated in MDC (25/127); there were 13 of 60 AA patients not evaluated in MDC. Patients evaluated in MDC were younger (63 vs. 67 yo, $p=0.016$), more likely to have their case discussed in tumor board ($p=0.044$), receive neoadjuvant therapy ($p=0.001$), and operated on by a fellowship-trained surgical oncologist ($p < 0.001$). There were no differences in final pathologic stage, resection margin, LVI and perineural invasion; however, patients seen in MDC had lower positive lymph nodes ($p=0.026$). Median overall survival (OS) was higher in patients managed in MDC than those who were not (48 vs. 34.9 mo., $p=0.057$). There was no statistical significance in median OS between AA and non-AA patients who attended MDC (55.9 vs. 47 mo., $p=0.234$). CONCLUSIONS: Our data suggests that evaluation and management in an MDC confers a survival advantage for patients undergoing pancreas surgery for PDAC. Moreover, when introduced across a diverse patient population in an integrated health care system, MDC was shown to reduce the survival gap between AA and non-AA patients. For AA patients, this data suggests that perhaps overcoming certain social determinants of health and access may play a more significant role than underlying differences in tumor biology.

Surgery

Reich DJ, Schlegel A, **Rizzari M**, Hashimoto K, Florman SS, De Vera ME, Foley DP, Mao SA, Chapman WC, Roll G, Pinna A, Saharia A, Merani S, Bohorquez HE, Akoad M, Kubal CA, and Alexopoulos S. EX SITU END ISCHEMIC HYPOTHERMIC OXYGENATED PERFUSION (HOPE) VERSUS STATIC COLD STORAGE PRIOR TO LIVER TRANSPLANTATION-EARLY RESULTS OF THE BRIDGE TO HOPE PIVOTAL MULTICENTER RANDOMIZED CONTROLLED CLINICAL TRIAL ON THE SAFETY AND EFFECTIVENESS OF THE VITASMART LIVER MACHINE PERFUSION SYSTEM (CLINICALTRIALS.GOV: Nct05045794). *Hepatol* 2023; 77(5):E124-E125. [Full Text](#)

D.J. Reich, Cleveland Clinic, Weston, FL, United States

Background: Ex-situ end-ischemic hypothermic oxygenated perfusion (HOPE) is a simple technique to improve liver transplant (LT) results and the donor shortage. HOPE after static cold storage (SCS) reduces ischemia reperfusion injury, early allograft dysfunction (EAD), cholangiopathy and other poor outcomes. A pivotal, US multicenter RCT opened in early 2022 to compare HOPE after SCS to HOPE alone for LT using extended criteria DBD and DCD grafts. Methods: Consented adults matched to a higher risk donor liver that the investigator committed to transplant were randomized 1:1 to SCS followed by HOPE at the transplant center or to SCS only. Livers randomized to the HOPE arm were perfused with the VitaSmart machine, through the portal vein only, at <4 mm Hg pressure, using actively oxygenated ($pO_2 > 60$ kPa) Belzer machine perfusion solution, for 1.5-5 hr. The primary efficacy endpoint is EAD and the primary safety endpoints are patient and graft survival. Other endpoints include primary non-function (PNF), ischemic cholangiopathy, adverse events, and length of stay (LOS). A centralized, blinded radiologist evaluated cholangiograms for cholangiopathy. Recipients were assessed post-transplantation on days 1-7, 14 and 30, and months 3, 6 and 12 post-LT. Target total enrollment is 244 patients completing transplant. Results: The study has reached the 25% enrollment milestone (61 of 244 targeted LTs, at 11 centers), with key outcomes depicted below. There were no device malfunctions or device-related AEs. Conclusion: Early results of this first US RCT of end-ischemic portal venous HOPE with VitaSmart for LT of extended criteria donor livers reveal promising outcomes, including device safety, lower risk of EAD and shorter hospital LOS.

Urology

Arora S, Wilder S, Butaney M, Rogers CG, and Jeong W. Outcomes of precision prostatectomy procedure for localized prostate cancer, and stepby-step technique of single port transvesical precision prostatectomy. *Eur Urol* 2023; 83:S1933. [Full Text](#)

Introduction & Objectives: Whole-gland treatment via radical prostatectomy or radiation is the mainstay of treatment for high-volume, low risk patients with prostate cancer (PCa), however it is associated with urinary and sexual side effects. Precision prostatectomy is a surgical technique that involves removal of

>90% of prostatic tissue, while also preserving functional recovery. The single port da Vinci robotic platform allows for a transvesical approach to the prostate gland. We describe a case of single port transvesical precision prostatectomy and report outcomes of patients who have received multiport precision prostatectomy at our institution. **Materials & Methods:** A 72-year-old patient with prior appendectomy and umbilical and hernia repair on active surveillance for unilateral left Grade Group 2 PCa elected to undergo surgery due to rising PSA. The following surgical steps are described: (1) transvesical access and robot docking, (2) anterograde bladder neck dissection, (3) standard dissection and nerve sparing on radical side, (4) development of precision plane, (5) apical dissection, (6) urethral transection, (7) posterior reconstruction, and (8) urethrovesical anastomosis. **Oncological and functional outcomes** of 88 patients with localized PCa undergoing multiport precision prostatectomy are reported. **Results:** The patient underwent an uncomplicated single port transvesical precision prostatectomy. He was discharged on post op day (POD) 1 and passed trial of void on POD 8. He was fully continent by 4 weeks post foley removal. The patient has not yet tried sexual activity postoperatively due to life events. 11-month follow-up shows a stable PSA of 0.7. All 88 patients undergoing multiport precision prostatectomy were alive and metastasis free at a median follow up of 25 months. At 36 months, 82 (93%) of patients were free from clinically significant residual PCa, 80 (91%) had not undergone additional treatment, and 100% were alive and free of metastatic disease. Two patients had biochemical failure according to Phoenix criteria, and 25 (22%) using the more stringent AUA post-RP criterion. However, detectable PSA was due to prostate cancer in only 10 patients as detected on biopsy of the remnant. Six (5%) patients underwent removal of the remnant; all six were free from biochemical failure after remnant removal at median follow-up of 10.2 months. At 12 months, 80 (91%) of patients were pad free, and 79 (90%) of the preoperatively potent patients had a SHIM score of 17 or more. **Conclusions:** Precision prostatectomy offers excellent postoperative functional results while minimizing PCa undertreatment. Single port transvesical precision prostatectomy is feasible and safe in select patients. Close patient follow-up and investigation into long-term oncological outcomes are necessary.

Urology

Bazzi M, Majdalany S, and Atiemo H. A CALL TO ACTION: ANALYSIS OF UROLOGY RESIDENT FEMALE PELVIC MEDICINE CASE LOGS. *Neurourol Urodyn* 2023; 42:S256. [Full Text](#)

M. Bazzi, Henry Ford Health System, United States

Introduction: Female pelvic medicine and reconstructive surgery fellowships (FPMRS) and minimally invasive laparoscopic /robotic urologic (MIS) fellowships were both established in the early 2000s. To date, the growth and effect of these fellowships on resident training has not been examined. The aim of this study is to compare the impact of these established fellowships on resident surgical exposure by analyzing graduating resident case logs. **Methods:** Graduating resident case numbers were obtained from the ACGME Case log reporting system from 2006-2020. To account for outliers, 50th percentile data rather than the average for each of these groups were compared. This study was exempt from Institutional Board Reviewed as the data used can be publicly accessed and deidentified. A T test with unequal variance was used to check if differences in case numbers are significant. **Results:** The 50th percentile of female cases logged nationally remained unchanged throughout the 15-year period while the number of robotic cases steadily increased every year. Using an unpaired T-test it was determined that the mean difference in the 2 groups is 94 with a p-value of less than 0.01. This means that over the past 15 years we see that urology residents on average record 94 more robotic cases compared to female cases. The 50th percentile average of FPMRS cases over 15 years is 35.4 whereas the number of MIS cases over the same time period is 129.4. A two-sample T-test of unequal variance yielded a significant difference between the logged cases, $p = 3.6 \times 10^{-7}$. **Conclusions:** Although MIS fellowships and FPMRS were established around the same time, resident exposure to FPMRS cases nationally have remained unchanged. Despite case log minimums for FPMRS and MIS cases set at 15 and 80 respectively, there has been a dramatic increase in the number of MIS cases logged over the 15-year time period whereas there is essentially no change in the number of FPMRS. Coupled with American Board of Urology data that only 8 out of 11 individuals obtained Board certification in FPMRS in 2021, we conclude that the establishment of MIS fellowships resulted in increased exposure and interest among residents, but the same effect was not seen in FPMRS. Increasing the minimum case log requirements for FPMRS surgeries may further influence residents to pursue the FPMRS profession.

Urology

Davis M, Stephens A, Morrison C, Majdalany S, Affas R, Arora S, Corsi N, Rakic I, Sood A, Rogers C, and Abdollah F. Racial disparities in future development of lethal prostate cancer based on PSA levels in midlife. *Eur Urol* 2023; 83:S1732-S1733. [Full Text](#)

Introduction & Objectives: Previous literature has examined prostate cancer (PCa) mortality in a Scandinavian population based on midlife PSA results. The aim of our study was to examine racial disparities in PCa mortality based on midlife PSA results in a North American population. **Materials & Methods:** Our cohort included self-identified White and Black men aged 40-59 years, who received their first PSA through our health system between the years 1995 and 2019. Next, patients were divided into 4 categories based on age as follows: 40 to 44, 45 to 49, 50 to 54, and 55 to 59 years. First PSA testing represented the main predictor of interest, and it was categorized based on median and 90th percentile for each age category. Fine-Gray regression was used to examine the impact of the value of PSA at first testing on the risk of developing lethal PCa (i.e. PCa-specific mortality) by race after accounting for all confounders including Charlson comorbidity index among others. Cancer-specific mortality and overall mortality were obtained by linking our database to the Michigan Vital Records registry. **Results:** A total of 112,967 men met inclusion criteria during the study period, of whom 82,084 (73%) were White and 30,883 (27%) were Black. Median and 90th percentile PSA were 0.7 and 2.0 ng/ml, respectively, in White men compared to 0.7 and 2.1 ng/ml, respectively, in Black men. For White men aged 40 to 44, 45 to 49, 50 to 54, and 55 to 59 years, median PSA was respectively 0.6, 0.7, 0.7, and 0.9 ng/ml compared to 0.6, 0.7, 0.8, and 0.9 ng/ml in Black men. The 90th percentile PSA in White men was respectively 1.3, 1.6, 2.0, and 2.8 ng/ml compared to 1.4, 1.8, 2.4, and 3.8 ng/ml in Black men. For the same age categories, the estimated rate of lethal PCa at 20 years was significantly higher in Black men when using the 90th percentile PSA cutoff (see Table). Median (IQR) follow-up was 6.7 (2.9 - 14.4) years for White men and 9.9 (4.4 - 16.4) years for Black men. On multivariable analysis, these findings were confirmed. [Table presented] **Conclusions:** Our findings suggest that Black men are significantly more likely to develop lethal PCa based on previously published midlife first-time PSA cutoffs. This information suggests that a lower midlife PSA cutoff could be considered amongst Black men. To the best of our knowledge, our report is the first to examine the racial disparities in lethal PCa based on first-time PSA results in a diverse North American cohort.

Urology

Pandolfo SD, Wu Z, Giuseppe S, Ferro M, Sundaram CP, Yong C, Derweesh IH, Dhanji S, Margulis V, Taylor J, Tozzi M, **Davis M**, Wood E, Mehrazin R, Gonzalgo ML, Eilender BM, Mendiola DF, Wang L, Tuderti G, Checcucci E, Verze P, Djaladat H, Porpiglia F, **Abdollah F**, and Autorino R. Predictive factors of complications in patients undergoing minimally invasive radical nephroureterectomy. *Eur Urol* 2023; 83:S1305-S1306. [Full Text](#)

Introduction & Objectives: This study aims to identify predictive complication risk factors of upper tract urothelial carcinoma (UTUC) after minimally invasive (laparoscopic or robotic assisted) nephroureterectomy (MIRNU). **Materials & Methods:** We performed a multicenter, retrospective analysis of 1492 patients with UTUC who underwent MIRNU at 13 institutions across the United States, Europe, and Asia. Multivariate regression models were used to identify predictive factors for complication. We considered different risk factors, including patient characteristics [age, body mass index (BMI), American Society of Anesthesiologists (ASA)], tumor related factors (high risk vs low risk), and surgery related factors [operative time, estimated blood loss (EBL)]. Three different model for overall, major postoperative complication (\geq Clavien-Dindo III) and 30-days readmission rate, were assessed. **Results:** A total of 1492 (821=Robot assisted; 671=laparoscopic) patients were included in analysis. Overall, 798 (53.5%) of patients developed (any grade) complications. There were 565 (37.9%), 179 (11.9%), 31 (2.1%), 11 (0.7%), and 12 (0.8%) in grade I, II, III, IV, V respectively. On multivariable analysis for overall post-operative complications, age [OR 1.02; CI 1-1.03; p=0.015], ASA score (\leq 2) [OR 0.12; CI 0.03-0.48; p=0.002], BMI (\leq 30) [OR: 0.93; CI (0.9-0.96); p<.001], high risk disease [OR 3.8; CI 1.001-1.004; p=0.013], and EBL [OR: 1.003; CI 1.001-1.004; p<.001] were significant. When considering major complication, high risk disease [OR: 6.76; CI (1.12-40.5); p= 0.03] was the only predictor of perioperative complications. Considering 30-day readmission rate, age [OR: 1.02; CI 1-1.03; p= 0.01], ASA (\leq 2) [OR:

0.2; CI 0.045-0.9; p= 0.03], BMI (<30) [OR: 0.93; CI (0.8-0.9); p<.001], and EBL [OR: 1.003; CI (1.002-1.003); p<.001] were associated with an increased risk. Conclusions: Patient related factors, cancer risk category and surgery related factors can play a role in the risk of complications after MIRNU. When it comes to high grade complications, high risk disease seems to be the most relevant factor. Risk of 30-day readmission seems to be driven by both patient characteristics and surgery related factors (EBL) with a lower BMI and ASA score having a protective effect against this risk.