

CARDIAC SERVICES RESEARCH UPDATE

Winter 2021

Sponsored by the
Cardiology specialty group
and TPMG Delivery Science
and Applied Research
(DARE) Program

WELCOME

to the 2021 edition of the KPNC Cardiology Research Update!

Dear Colleagues,

The breadth and quality of research ongoing at TPMG has never been greater. Despite the hardships of this past year, Cardiac Service Line physicians have risen to the challenge to pursue innovative research across many areas, including Covid-19. This is more than just JAMM!

Please enjoy and take pride in the accomplishments highlighted in this issue of our Research Newsletter.



A DEEPER LOOK INSIDE THIS UPDATE:

- Research highlight: MITIGATE Study
- Upcoming Events / Funding
- Active Research Projects
- Clinical Trials Update
- Recent Publications List



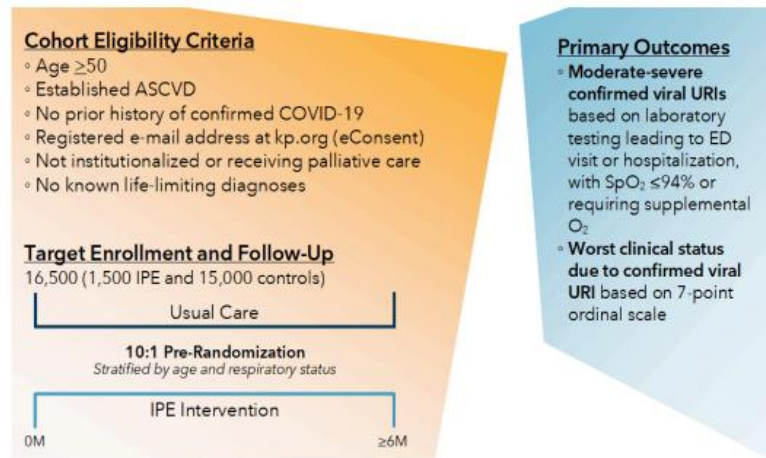


Research Highlight: MITIGATE Study

Led by Co-PIs Andrew Ambrosy, MD, and Alan Go, MD, the MITIGATE Study is a first-of-its-kind, virtual enrollment pragmatic clinical trial. Nearly all of us have patients eligible for this ground-breaking trial, and we are thrilled to be able to contribute to this important work.

Objective: The MITIGATE Study will evaluate whether pre-treatment with icosapent ethyl (IPE) decreases the risk of laboratory-confirmed viral URI-related morbidity and mortality compared to standard of care in a high-risk cohort of adults with established

Background: Patients with known ASCVD are at higher risk of COVID-19 and its complications. Vascepa® (or IPE) is a high-dose and purified prescription drug containing eicosapentaenoic acid, an omega-3 fatty acid, that is approved by the U.S. Food and Drug Administration (FDA) as an adjunctive therapy to reduce the risk of heart attack and strokes in



patients with known ASCVD. Preclinical data suggest that IPE may have direct antiviral properties and anti-inflammatory pleiotropic effects that may prevent and/or reduce the sequelae of COVID-19, seasonal flu, and other viral upper respiratory infections (URIs).

What to expect:

1. Initially eligible patients across the region will be identified by the study team, screened electronically to confirm eligibility, and then randomized to either IPE vs. usual care.
2. For patients assigned to IPE, a staff message will be sent to the patient's treating physician (i.e., you!) in HealthConnect requesting permission for the patient to be approached to participate and receive IPE.
3. If the treating physician does not respond after two weeks, patients will be sent a recruitment email and contacted by the study team.
4. Informed consent will be completed by a study physician via a video visit using an electronic consent (eConsent) platform.
5. After obtaining informed consent, a study physician will submit an order through HealthConnect for IPE using the KPNC specialty pharmacy who will mail the IPE to the patient.
6. The study team will also contact the patient monthly to confirm and reinforce compliance with IPE and answer any questions about IPE or the study.



Upcoming Events

1. **American Geriatric Society Annual Scientific Meeting, May 13-15, 2021 (Virtual conference)**
<https://meeting.americangeriatrics.org/>
2. **ACC.21 70th Scientific Sessions, May 15-17, 2021**
<https://accscientificsession.acc.org/>
3. **KPNC Cardiovascular Research Symposium
Forthcoming in Spring 2021**
4. **HFSA Annual Scientific Meeting, Sept 10-13, 2021
Aurora, CO**
<https://hfsa.org/event/2021-hfsa-annual-scientific-meeting>
5. **TCT 2021 Conference, Oct 22-26, 2021
San Francisco, CA**
<https://www.tctmd.com/node/34476>
6. **AHA Scientific Sessions, Nov 13-15, 2021
Dallas, TX**
<https://exhibitatsessions.org/scientific-sessions/>

Internal Research Funding Opportunities (click links)



[General Funding Opportunities](#)



[Division of Research](#)



[Delivery Science and Applied Research](#)

Active or Recently Completed Research Projects

Wow. The number of active, non-clinical trial research projects among TPMG Cardiac Service Line physicians is incredible. There are 35 currently active non-trial projects across a broad range of clinical problems, with funding sources ranging from internal TPMG-sponsored programs to NIH grants, and with the majority of projects exemplifying the strong collaboration between service line MDs, the KPNC Division of Research and the Biostatistical Consulting Unit.

1. Contemporary Risk Stratification in Patients with Chronic Systolic Heart Failure.
PI: Sirtaz Adatya, Co-Investigators: Keane Lee, and Alan Go.
Funding Source: KPNC Community Benefit Grant 2021.
2. Outpatient Worsening Heart Failure in an Integrated Health Care Delivery System: An Innovative Approach to Characterizing a Novel Clinical Entity
PI: Andrew Ambrosy
Funding Source: National Heart, Lung, and Blood Institute
3. Transcatheter Mitral-Valve Repair in Patients with Heart Failure and Functional Mitral Regurgitation - Potential Scope and Clinical Benefit of Early Adoption at an Integrated Healthcare Delivery System
PI: Andrew Ambrosy
Funding Source: Abbott Laboratories
4. Evaluating Inpatient and Outpatient Encounters Within a Learning and Integrated Health Care Delivery Organization Due to Worsening Heart Failure (UTILIZE-WHF)
PI: Andrew Ambrosy, Alan Go;
Funding Source: Novartis
5. Healthy Eating as a Means for Active Living in Heart Failure (HEAL-HF) Study
PI: Andrew Ambrosy; Alan Go; Gordon, Nancy
Funding Source: Northern California Community Benefit Program
6. Disparities in Residual Risk in Patients Receiving Statins for Primary or Secondary Prevention at an Integrated Health Care Delivery System (KP Reach)
PI: Andrew Ambrosy
Funding Source: Amarin Pharmaceuticals
7. A Multi-center, Multi-country Retrospective Cohort Study to Evaluate the Clinical Outcomes in Adults with Severe COVID-19
PI: Alan Go. Co-investigator: Andrew Ambrosy
Funding Source: Gilead Sciences, Inc.

8. Identification and Management of Familial Hypercholesterolemia in KPNC
PI: Richard Birnbaum. Co-investigator: Andrew Avins
Funding Source: Rapid Analytics Unit, Division of Research, TPMG Delivery Science and Applied Research Program.
9. HIV Risk of Developing Heart Failure by Age, Gender and Race/Ethnicity: The HIV HEART Study
Co-PIs: Alan S. Go and Michael Silverberg. Co-investigators: Andrew Ambrosy, Harshith Avula, Keane Lee
Funding Source: National Health Lung, and Blood Institute (R01 HL132640).
10. HIV Infection and Risks of Morbidity and Death in Adults with Incident Heart Failure
Co-PIs: Alan S. Go and Michael Silverberg. Co-investigators: Harshith Avula, Andrew Ambrosy, Keane Lee.
Funding Source: National Health Lung, and Blood Institute (R01 HL132640).
11. Comprehensive assessment of harm and benefit in SPRINT.
PI: Ashok Krishnaswami
Funding Source: Non-funded
12. Association of multimorbidity in older adults after permanent pacemaker placement. From the KP Implant Registry.
PI: Ashok Krishnaswami. Co-investigators: Taylor Liu
Funding Source: Non-funded
13. Periprocedural Code Status for TAVR.
PI: Gwen Bernacki (Univ of Washington). Co-investigators: Ashok Krishnaswami.
Funding Source: ACC State Chapter Grant
14. Pharmacist-Led Deprescribing Program in Hospice Patients.
PI: Vy Le, PharmD. Co-investigators: Ashok Krishnaswami.
Funding Source: GME/resident project
15. A Pragmatic Randomized Controlled Trial of a Bundled, Pharmacist-Led Hyperpolypharmacy Deprescribing Intervention.
PI: Lynn Deguzman, Maisha Draves, Lisa Herrington. Co-investigators: Ashok Krishnaswami.
Funding Source: TPMG Delivery Science Program
16. Long-Term Outcome in Unruptured Brain Arteriovenous Malformation Patients.
PI: Helen Kim (UCSF), Co-Is: Jonathan Zaroff and members of an international consortium. Funding Source: NIH/NINDS.
17. Evidence Based Evaluation and Acceptance of Donor Hearts for Transplantation.
PI: Kiran Khush (Stanford), Co-Is: Jonathan Zaroff and Darren Malenoski (OHSU).
Funding Source: NIH-NHLBI

18. Clinical Characteristics, Periprocedural Complications, and Outcomes of Patients with Severe Aortic Stenosis Undergoing Elective versus Urgent/Emergent Transcatheter Aortic Valve Replacement within and Integrated Health Care System
PI: Jacob Mishell. Co-Investigators: Alan Go, Andrew Ambrosy
Funding Source: KPNC Community Benefit Grant 2021
19. Outcomes of the Heart Health for South Asians (HHSa) Program.
PI: Seema Pursnani. Co-Investigators: Uma Vadlakonda.
Funding Source: GME/ Resident project
20. Atherosclerotic cardiovascular disease risk in South Asians by statin use.
PI: Seema Pursnani. Co-Investigators: Neha Mantri, Jamal Rana, Alan Go.
Funding Source: GME/ fellow project
21. Assessing the impact of the Covid-19 pandemic on glycemic control and covid-19 infection in diabetic patients.
PI: Seema Pursnani. Co-Investigator: Joseph Vu (Endocrine).
Funding Source: GME/ Resident project.
22. Understanding the impact of race-ethnicity and gender on cardiovascular outcomes following CABG.
PI: Seema Pursnani. Co-Investigators: Ahmed Sheikh, Richard Ha.
Funding Source: GME/ Resident project.
23. Long-term follow up of maternal outcomes in peripartum cardiomyopathy.
PI: Seema Pursnani. Co-Investigator: Erica Gunderson (DOR).
Funding Source: GME/ Resident project.
24. Assessing glycosylated hemoglobin (HbA1c) thresholds for development of cardiovascular disease by racial-ethnic groups. PI: Seema Pursnani. Co-Investigator: Joseph Vu (Endocrine).
Funding Source: KPNC Community Benefit Grant 2020
25. Duration of Dual Antiplatelet Therapy After Percutaneous Coronary Intervention for Chronic Total Occlusion.
PI: Amit Sachdeva. Co-investigators: Matt Solomon, Ed McNulty
Funding Source: KPNC Community Benefit Grant 2019
26. Ticagrelor versus Clopidogrel for Patients with Acute Coronary Syndrome: Evidence from a Real-World Cohort.
PI: Amit Sachdeva. Co-investigators: Matt Solomon, Ed McNulty, Neha Mantri
Funding Source: KPNC Community Benefit Grant 2020
27. CABG vs PCI in Older Acute Coronary Syndrome (ACS) patients - Impact of revascularization strategy on outcomes.
PI: Ahmed Ijaz Shah. Co-investigators: Ashok Krishnaswami, Jamal Rana, Matt Solomon.
Funding Source: KPNC Community Benefit Grant 2019-2020.

28. Comparison of high risk percutaneous coronary intervention in cardiovascular surgery back-up sites versus non-CV surgical sites.
PI: Ahmed Shah. Co-investigators: Kevin Kheder, Matt Solomon.
Funding Source: KPNC Community Benefit Grant 2021.
29. Acute Emergency Care and Outcomes for Stroke, Myocardial Infarction, and Surgery During the COVID-19 Pandemic in Kaiser Permanente Northern California: Implications for Care Delivery During COVID-19 Recovery Phase and Future Surges. Co-PIs: Matt Solomon, David Vinson, Mai Nguyen, Robert Chang. Co-Investigators: Alan Go.
Funding Source: Garfield Memorial Fund
30. Management and Outcomes for Valvular Heart Disease.
PI: Matt Solomon. Co-Investigators: Alan Go, Rick Nishimura.
Funding Source: TPMG Physician Researcher Program
31. Natural History of Thoracic Aortic Aneurysm and Acute Aortic Dissection.
PI: Matt Solomon. Co-Investigators: Alan Go.
Funding Source: TPMG Physician Researcher Program and KPNC CB Program
32. Predictors of Post-PCI Resource Utilization and Outcomes.
PI: Matt Solomon. Co-Investigators: Alan Go
Funding Source: Abbott Inc.
33. Effectiveness of Care Processes Recommended to Improve Perioperative Cardiovascular Risk Management for Noncardiac Surgery.
PI: Lisa Herrington. Co-Investigators: Matt Solomon
Funding Source: TPMG Delivery Science and Applied Research Program
34. Clinical Characteristics of COVID-19 in Solid Organ Transplant Recipients.
PI: Dana Weisshaar
Funding Source: Unfunded
35. Examination of the Acute Effects of Azithromycin Use on Cardiovascular Mortality, as Compared with Amoxicillin.
PI: Jonathan Zaroff. Co-Is: Douglas Corley, Craig Cheetham (KPSC).
Funding Source: Pfizer Inc

Active or Recently Completed Clinical Trials

The TPMG footprint in the Clinical Trials space continues to grow in size and prominence. Kudos to the efforts and success across multiple fronts, including individual providers and their tenaciousness, the continued march and growth of the Structural Heart Program (under the leadership of Jacob Mishell, MD), the tireless work of the Clinical Trials Units around the region, and the re-organization of the regional DOR Clinical Trials Program (under the leadership of Alan Go, MD). One example of the recognition of this solid work is highlighted by recent lead authorships of secondary analyses from the MitraCLIP (Umar Malik, MD, Ivy Ku, MD, Andrew Ambrosy, MD, Jacob Mishell, MD), PROMISE (James Jang, MD) and SPRINT trials (Ashok Krishnaswami, MD). You are all making us proud.

1. REducing Lung congestlon symptoms using the v-waVE shunt adVancEd Heart Failure (RELIEVE HF). Enrolling, 2020-present.
PI: Alicia Romero. Co-I's: Van Selby, Ann Sheridan, Jana Svetlichnaya, Jacob Mishell, Andrew Rassi.
Funding Source: V-Wave Ltd.
2. Evaluate the clinical safety and efficacy of the Cordella® Pulmonary Artery (PA) Pressure Sensor and assess the benefit of PA pressure-guided disease management for patients with NYHA Class III heart failure (PROACTIVE HF). Enrolling, 2020-present.
PI: Sirtaz Adatya, Jana Svetlichnaya. Co-I's: Brandon Varr, Eric Fuh, Van Selby, Dana McGlothlin, Alicia Romero.
Funding Source: Endotronix
3. Randomized Clinical Evaluation of the AccuCinch® Ventricular Restoration System in Patients Who Present With Symptomatic Heart Failure With Reduced Ejection Fraction (HF_rEF) (CORCINCH-HF). Enrollment begins 2021.
PI: Van Selby. Co-I: Jacob Mishell.
Funding Source: Ancora Heart, Inc.
4. Transcatheter Replacement of Stenotic Aortic Valve through Implantation of ACURATE neo2 Transfemoral Aortic Valve System in Intermediate or greater Surgical Risk Subjects (ACURATE IDE). Enrolling, 2019-present.
PI: Andrew Rassi. Co-I's: Jacob Mishell, Gordon Leung, Ed McNulty, David Lange, Richard Richter, Ahmad Sheikh, Xiushui Ren, Samir Thadani, Gennie Yee.
Funding Source: Boston Scientific
5. Transcatheter Mitral Valve Replacement With the Medtronic Intrepid TMVR System in Patients with Severe Symptomatic Mitral Regurgitation (APOLLO).
PI: Andrew Rassi. Co-PI: Vic Melikian. Co-I's: Jacob Mishell, Ivy Ku, Gordon Leung, Richard Richter, Ahmad Sheikh, Mario Pompili, Timothy Lee. Enrolling, 2018-present.
Funding Source: Medtronic



6. PASCAL TrAnScatheter Mitral Valve RePair System Pivotal Clinical Trial: A Prospective, Multicenter, Randomized, Controlled Pivotal Trial to Evaluate the Safety and Effectiveness of Transcatheter Mitral Valve Repair With the Edwards PASCAL Transcatheter Mitral Valve Repair System Compared to Abbott MitraClip in Patients With Degenerative Mitral Regurgitation (DMR) (CLASP IID).
PI: Andrew Rassi. Co-I's: Jacob Mishell, Ivy Ku, Gordon Leung, Jonathan Zaroff, Vic Melikian, Ahmad Sheikh, Timothy Lee, David Lange. Enrolling, 2019-present.
Funding Source: Edwards
7. PASCAL Transcatheter Valve Repair System Pivotal Clinical Trial: A Prospective, Multicenter, Randomized, Controlled Pivotal Trial to Evaluate the Safety and Effectiveness of Transcatheter Tricuspid Valve Repair With the Edwards PASCAL Transcatheter Valve Repair System and Optimal Medical Therapy (OMT) Compared to OMT Alone in Patients With Tricuspid Regurgitation (CLASP II TR). Enrolling, 2020-present.
PI: Andrew Rassi. Co-I's: Jacob Mishell, Ivy Ku, Gordon Leung, Jonathan Zaroff, David Lange, Van Selby, Jana Svetlichnaya, Vic Melikian, Ahmad Sheikh.
Funding Source: Edwards.
8. PROTECTED TAVR: Stroke PROTECTION With SEntinel During Transcatheter Aortic Valve Replacement (PROTECTED TAVR). Enrolling, 2020-present.
PI: David Lange. Co-I's: Jacob Mishell, Andrew Rassi, Ed McNulty, Philip Chang, John Betjemann.
Funding Source: Boston Scientific
9. Evaluation of Transcatheter Aortic Valve Replacement Compared to Surveillance for Patients with Asymptomatic Severe Aortic Stenosis (EARLY TAVR). Enrolling, 2018-present.
PI: Richard Richter. Co-I's: Ed McNulty, Jacob Mishell, Andrew Rassi, David Lange, Kenneth Fox, Gordon Leung, Xiushui Ren, Samir Thadani, Gennie Yee.
Funding Source: Edwards Life Sciences
10. Kaiser Permanente Evaluation of Medically-Tailored Meals in Adults with Chronic Medical Conditions at High Readmission Risk (KP NOURISH). Enrolling, 2020-present.
PI: Alan Go. Co-I: Andrew Ambrosy.
Funding Source: Kaiser Permanente National Community Health
11. Pragmatic Randomized Trial of Icosapent Ethyl for High-Cardiovascular Risk Adults (MITIGATE). Enrolling, 2020-present.
PI's: Andrew Ambrosy, Alan Go. Co-I's: Anne Goh, Van Selby, Harshith Avula, Matt Solomon.
Funding Source: Amarin Corporation
12. ToRsemide compARisoN with furoSemide FOR Management of Heart Failure (TRANSFORM-HF). Enrollment paused (Covid-19), 2018-present.
PI: Andrew Ambrosy. Co-I: Anne Goh
Funding Source: National Heart, Lung, and Blood Institute

13. reducInG Stroke by Screening for UndiAgnosEd atRial Fibrillation in Elderly inDividuals (GUARD-AF). Enrolling, 2021-present.
PI: Alan Go. Co-I's: Andrew Ambrosy, Matt Solomon
Funding Source: Bristol Meyers-Squibb and Pfizer
14. A phase 1/2/3, placebo-controlled, randomized, observer-blind, dose-finding study to evaluate the safety, tolerability, immunogenicity, and efficacy of SARS-COV-2 RNA vaccine candidates against COVID-19 in healthy individuals. Enrolling, 2020-present.
PI: Nicola Klein. Co-I: Dana Weisshaar.
Funding source: Pfizer
15. Reduced red Blood Counts in older Heart failure participants: Evaluation And Related Treatment (RBC HEART). Closed to enrollment (long term follow-up), 2018-present.
PI: Alan Go. Co-I's: Andrew Ambrosy
Funding Source: National Institute on Aging
16. Partner3: A Prospective, Randomized, Controlled, Multi-Center Study to Establish the Safety and Effectiveness of the SAPIEN 3 Transcatheter Heart Valve in Low Risk Patients who have Severe, Calcific, Aortic Stenosis Requiring Aortic Valve Replacement.
PI: Ed McNulty. Co-I's: Richard Richter, Gordon Leung, Kenneth Fox, Jacob Mishell, Xiushui Ren, Samir Thadani, Vic Melikian, Ahmad Sheikh, Andrew Rassi, Mario Pompili, Gennie Yee. Closed to enrollment (long term follow-up), 2016-present.
Funding Source: Edwards Life Sciences
17. The Xience Short DAPT Program: Xience 28.
PI: Andrew Lee. Co-I's: David Lange, Vindhya Hindnavis, Michael Ho. Closed to enrollment (long term follow-up), 2018-present.
Funding source: Abbott Laboratories.
18. A Clinical Evaluation of the Safety and Effectiveness of the MitraClip System for the Treatment of Functional Mitral Regurgitation in Symptomatic Subjects Too High Risk to Undergo Mitral Valve Surgery (COAPT).
PI: Jacob Mishell. Co-I's: Ivy Ku, Ann Sheridan, Dana McGlothlin, Dana Weisshaar, Andrew Rassi, Gordon Leung, Jonathan Zaroff, Gennie Yee, Vic Melikian, Ahmad Sheikh. Closed to enrollment (long term follow-up), 2013-present.
Funding Source: Abbott
19. Reduce elevated left atrial pressure in patient with Heart Failure (REDUCE LAP HF II).
PI: Alicia Romero. Co-I's: Ann Sheridan, Andrew Rassi, Jacob Mishell, Dana McGlothlin, Ivy Ku, Kenneth Mahrer. Closed to enrollment (long term follow-up), 2017-present.
Funding Source: Corvia Medical
20. A Phase 3 Randomized Study to Evaluate the Safety and Antiviral Activity of Remdesivir in Participants with Moderate COVID-19. Closed to enrollment, 2020.
PI: Jacek Skarbinski. Co-I's: Dana Weisshaar, Christopher Woo.
Funding Source: Gilead Sciences

21. A Phase 3 Randomized Study to Evaluate the Safety and Antiviral Activity of Remdesivir in Participants with Severe COVID-19. Closed to enrollment, 2020.
PI: Jacek Skarbinski. Co-I's: Dana Weisshaar, Christopher Woo.
Funding Source: Gilead Sciences

Recent Publications or other Scholarly Work Co-authored by KPNC Cardiac Service Line MDs

AMAZING. Astonishing. Beyond ... What other adjectives could be used to describe the 79 publications published by Cardiac Service Line physician authors and co-authors in 2019-2020? Despite a once-in-a-lifetime global pandemic, our TPMG group continued to execute and deliver, publishing on a wide range of cardiovascular topics in 2020, co-authoring AHA Scientific Statements (Jamal Rana, MD, PhD), and in 38 different high-profile medical journals. We are buoying our TPMG brand. This is our JAMM. Let's keep going.

Journals and Impact Factor

1. The New England Journal of Medicine – 74.7
2. The BMJ - 30.2
3. Nature Genetics - 27.6
4. Circulation - 23.6
5. Annals of Internal Medicine - 21.3
6. Journal of the American College of Cardiology – 20.6
7. Diabetes Care - 16.0
8. JAMA Cardiology - 12.8
9. European Journal of Heart Failure – 11.6
10. JACC: Cardiovascular Interventions – 9.5
11. JACC: Heart Failure - 8.8
12. Hypertension - 7.0
13. Addiction - 6.9
14. BMC Endocrine Disorders - 6.8
15. Circulation: Heart Failure – 6.0
16. Circulation: Cardiovascular Imaging – 5.7
17. European Journal of Preventive Cardiology - 5.6
18. Canadian Journal of Cardiology – 5.6
19. Journal of Medical Internet Research – 5.0
20. The American Journal of Medicine – 4.8
21. Journal of General Internal Medicine – 4.6
22. Journal of the American Heart Association – 4.5
23. Atherosclerosis - 4.2
24. Diabetes Research and Clinical Practice – 4.2
25. American Heart Journal - 4.2
26. Atherosclerosis – 3.9
27. HIV Medicine - 3.7
28. International Journal of Cardiology - 3.5
29. Cancer Medicine - 3.4
30. Journal of Cardiac Failure – 3.3
31. Annals of Epidemiology - 2.8
32. ASAIO Journal - 2.7
33. American Journal of Cardiology – 2.6
34. Journal of Cardiovascular Translational Research - 2.3
35. Clinical Transplantation – 1.8
36. Cardiology Journal – 1.8
37. Echocardiography - 1.4
38. The Permanente Journal - 0.94

1. Jang JJ, Bhapkar M, Coles A, Vemulapalli S, Fordyce CB, Lee KL, Udelson JE, Hoffmann U, Tardif JC, Jones WS, Mark DB, Sorrell VL, Espinoza A, Douglas PS, Patel MR; PROMISE Investigators. Predictive Model for High-Risk Coronary Artery Disease. *Circ Cardiovasc Imaging*. 2019 Feb;12(2):e007940. doi: 10.1161/CIRCIMAGING.118.007940. PMID: 30712364; PMCID: PMC6368397.
2. Stuijzand WJ, van Rosendael AR, Lin FY, Chang HJ, van den Hoogen IJ, Gianni U, Choi JH, Doh JH, Her AY, Koo BK, Nam CW, Park HB, Shin SH, Cole J, Gimelli A, Khan MA, Lu B, Gao Y, Nabi F, Nakazato R, Schoepf UJ, Driessen RS, Bom MJ, Thompson R, Jang JJ, Ridner M, Rowan C, Avelar E, Génèreux P, Knaapen P, de Waard GA, Pontone G, Andreini D, Al-Mallah MH, Lu Y, Berman DS, Narula J, Min JK, Bax JJ, Shaw LJ; CREDENCE Investigators. Stress Myocardial Perfusion Imaging vs Coronary Computed Tomographic Angiography for Diagnosis of Invasive Vessel-Specific Coronary Physiology: Predictive Modeling Results From the Computed Tomographic Evaluation of Atherosclerotic Determinants of Myocardial Ischemia (CREDENCE) Trial. *JAMA Cardiol*. 2020 Aug 19:e203409. doi: 10.1001/jamacardio.2020.3409. Epub ahead of print. PMID: 32822476;
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6. Javeed SN, Pursnani S. Image Diagnosis: Takotsubo Cardiomyopathy Mimicking an Acute ST Elevation Myocardial Infarction in the Setting of Anti-Depressant Therapy Withdrawal. *Perm J*. 2020;24:19.095. doi: 10.7812/TPP/19.095. Epub 2020 Apr 3. PMID: 33211644;
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8. Krishnaswami A, Beavers C, Freeman AM, Bhavnani SP et al. Gerotechnology for Older Adults with Cardiovascular Diseases. *J Am Coll Cardiol* 2020; 76:2650-70; <https://doi.org/10.1016/j.jacc.2020.09.606>
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