2021 Hawaii Chapter

Scientific Meeting

Progress Through the Pandemic: "Imua i ka Ma'i Nui"

Saturday, February 20, 2021

Virtually via Zoom

- *This activity has been designated for 6.75 CME credits and 6.75 MOC points*

American College of Physicians

2020
ACP Chapter
Excellence
Bronze Award

Presented to the

Hawaii Chapter

for meeting the standards determined by the
Chapters Subcommittee to achieve
basics in chapter management.

Chair, Chapters Subcommittee
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Learning Objectives

At the conclusion of this activity, the participant will be able to:

- Updates to COVID-19
- COVID-19 Research
- COVID Testing in Hawaii

CME Accreditation and MOC Points

The American College of Physicians is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

The American College of Physicians designates this live activity for a maximum of **6.75** ***AMA PRA Category 1 Credit(s)*** ***™***. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Successful completion of this CME activity, which includes participation in the evaluation component, enables the participant to earn up to 6.75 medical knowledge MOC points in the American Board of Internal Medicine's (ABIM) Maintenance of Certification (MOC) program. Participants will earn MOC points equivalent to the amount of CME credit claimed for the activity. It is the CME activity provider's responsibility to submit participant completion information to ACCME for the purpose of granting ABIM MOC credit.

Your Opinion Counts

At the conclusion of the meeting, please take a moment to complete the meeting survey form and verification of attendance form in your packet and return it to the registration desk. We value your opinion and use the surveys in planning future meetings.

Chapter Excellence Award

We are pleased to announce that our chapter is in receipt of the 2020 Chapter Excellence Award. The Chapter Excellence Award recognizes those chapters that excel in reaching the standards for managing a chapter, such as communicating to members, instituting Medical Students' and Resident/Fellow Members' activities and advancing and recruiting members.

Resident/Fellows' and Medical Students' Activities

Clinical vignettes, posters, and research papers prepared by Resident/Fellow Members and Medical Students will be presented at the meeting. Winners will receive a cash prize and be eligible for entrance into the national competition held during the ACP Internal Medicine National Meeting 2021.

Pathways to Fellowships

Attendance at chapter meetings can help all ACP members meet the qualifications for advancement to Fellowship. It is especially important for those applying under the pathway that calls for five years of activity as a member.

Governor

Lisa A. Camara, MD, FACP - Assistant Clinical Professor, Department of Medicine, University of Hawaii and Physician at Kaiser Permanente, Honolulu, HI
ACP Governor, Hawai'i Chapter
Email: Lisa.A.Camara@kp.org

Program Committee

Co-Chairs:
Samuel Evans, MD, FACP, Assistant Professor, Department of Medicine, University of Hawai'i and Hawai'i Pacific Health, Honolulu, HI
Kuo-Chiang Lian, MD, Assistant Professor, Department of Medicine, University of Hawai'i and Queen's Medical Center, Honolulu, HI

Committee:
Linda Anegawa, MD, FACP, Assistant Clinical Professor, Department of Medicine, University of Hawai'i, Honolulu, HI
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Kevin Brown, MD, Chief Medical Resident, Tripler Army Medical Center, Honolulu, HI
Lisa Camara, MD, FACP, Assistant Clinical Professor, Department of Medicine, University of Hawai'i and Physician at Kaiser Permanente, Honolulu, HI
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Alvin Furuike, MD, FACP, Clinical Professor, Department of Medicine, University of Hawai'i and Queen's Medical Center, Honolulu, HI
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Donald Helman, MD, FACP, Associate Clinical Professor, Department of Medicine, University of Hawai'i and Kaiser Permanente, Honolulu, HI
Jennifer Katada, MD, Assistant Clinical Professor, Department of Medicine, University of Hawai'i and Kaiser Permanente, Honolulu, HI
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Jatinder Lachar, MD – Assistant Clinical Professor, Department of Medicine, University of Hawai'I, Honolulu, HI
Daniel Miles, MD, Chief Medical Resident, Tripler Army Medical Center, Honolulu, HI
Ryon Nakasone, MD, **FACP -** Assistant Professor, Department of Medicine, University of Hawai'i, Honolulu, HI
Hisami Oba, MD – Chief Medical Resident, Kaiser Permanente, Honolulu, HI
Janet Onopa, MD, FACP – Kaiser Permanente, Honolulu, HI

Florian Sattlemachier, MD, FACP – Assistant Clinical Professor, Department of Medicine, University of Hawai‘i , Honolulu, HI
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Miki Ueoka, MD – Chief Medical Resident, UH Internal Medicine Residency Program, Honolulu, HI
Philip Verhoef, MD, FACP – Assistant Clinical Professor, University of Hawai‘i and Kaiser Permanente, Honolulu, HI
James Yess, MD, FACP – Assistant Professor, Department of Medicine, University of Hawai‘i, Honolulu, HI

Faculty

Maria Torroella Carney, MD, FACP - Chief, Division Geriatrics and Palliative Medicine; Medical Director, Post-Acute Services; Professor, Zucker School of Medicine at Hofstra/Northwell, Northwell Department of Medicine, New York, NY

Aimee Grace, MD – Director, Office of Strategic health Initiatives, University of Hawai‘i System; Lead, UHealthy Hawai‘i Initiative and UH System Federal Affairs, Honolulu, HI

Joshua Green, MD – Lieutenant Governor State of Hawai‘i, Emergency Room Physician, Hawai‘i Island, Honolulu, HI

Stephanie Guo, MD – Hospitalist, Queen’s Medical Center, Honolulu, HI

James Ireland, MD – Chief, Honolulu Emergency Medical Services, Honolulu, HI

Sarah Kemble, MD, FACP – Acting State Epidemiologist, State of Hawai‘i, Department of Health, Honolulu, HI

Scott Miscovich, MD – President and Founder of Premier Medical Group Hawaii, Honolulu, HI

Alex C Spyropoulos, MD, FACP, FCCP, FRCPC - Professor of Medicine – The Donald and Barbara Zucker School of Medicine at Hofstra/Northwell; Professor - The Center for Health Innovations and Outcomes Research - The Feinstein Institute for Medical Research; System Director – Anticoagulation and Clinical Thrombosis Services Northwell Health at Lenox Hill Hospital, New York, NY

A. Christian Whelen, PhD, D(ABMM) – Vice President and Technical Director of Microbiology, Diagnostic Laboratory, and Professor of Pathology, UH, JABSOM

Amy Woron, PhD, MPH, MS, M(ASCP) – Molecular Manager, Diagnostic Laboratory Services, Honolulu, HI

Doctor’s Dilemma -

Kevin Brown, MD - Chief Medical Resident, Tripler Army Medical Center, Honolulu, HI
Natsumi Hamahata, MD – Chief Medical Resident, UHIMRP, Honolulu, HI
Daniel Miles, MD – Chief Medical Resident, Tripler Army Medical Center, Honolulu, HI
Hisami Oba, MD – Chief Medical Resident, Kaiser Permanente, Honolulu, HI
Miki Ueoka, MD – Chief Medical Resident, UHIMRP, Honolulu, HI

New Fellows -

Sharon Chi, DO FACP
Daven K Chun, MD FACP

Legacy Members – ACP Hawaii Members with 30 years of Service or More

Years	Member
70+	Frederick L Giles, MD FACP
60+	James W Linman, MD FACP
50+	Robert S Hockwald, MD FACP
	Leon B Katz, MD FACP
	Alfred D Morris, MD FACP
	Winfred Y Chang, MD
	Virgil A Place, MD FACP
	Reginald C Ho, MD
	George N Irwin, MD
	Dudley S Seto, MD
	Carl W Boyer, Jr MD FACP
	Douglas G Massey, MD FACP
	Robert Whang, MD FACP
	Edward L Chesne, MD FACP
	Douglas B Bell, II MD
	Howard I Keller, MD FACP
	James Lumeng, MD FACP
	Arnold W Siemsen, MD FACP
40+	Vincent S Aoki, MD FACP
	James J Ball, MD FACP
	John H Kim, MD FACP
	Robert E Dyer, MD FACP
	Mark T Kuge, MD
	Joel D Brown, MD FACP
	John S Falzarano, MD
	William C James, MD FACP
	Eugene G C Wong, MD FACP
	Werner G Schroffner, MD FACP
	Marconi M Dioso, MD
	Richard I Frankel, MD MPH FACP
	Wilfred Y Fujimoto, MD FACP
	Roy O Kamada, MD FACP
	Martin I Leftik, MD
	Fortunato V Elizaga, MD FACP
	Judy L Jordan, MD
	Stephen B Kemble, MD
	Dukee Kim, MD
	Gildo S Soriano, MD FACP
	Christine S Fukui, MD
	Arnold F Jacobson, MD
	Grace R Inouye, MD
	James E Hastings, MD FACP
	C M Marsh, MD
	Richard T Min, MD FACP
	Francis D Pien, MD FACP
	Chien-Fong Wu, MD
	Robert L Justice, MD
	Donald K Nikaitani, MD
	Bruce J Purvis, MD
	William E Kaye, MD FACP
	Thomas Au, MD FACP
	Jonathan K Cho, MD
	Brian F Issell, MD FACP
	Tay-Ing Yang, MD
30+	William K K Lau, MD FACP
	Jose A Ganel, MD FACP
	Reuben C Guerrero, MD FACP
	George H Underwood, MD FACP
	Roland C K Ng, MD FACP
	Edward N Shen, MD FACP
	Birendra S Huja, MD
	Elliot J Kalauawa, MD
	Joseph Y Murakami, MD
	Warren I Tamamoto, MD FACP
	Guy N Yatsushiro, MD
	Edward A Silver, MD
	David Fitz-Patrick, MD FACP
	John S Melish, MD FACP
	Edward J Morgan, III MD FACP
	Bruce L Nelson, MD FACP
	Dennis W Rowe, MD FACP
	Stanley S Shimoda, MD FACP
	S Kalani Brady, MD MPH MACP
	Steven M Lum, MD FACP
	Kenneth M Sumida, MD FACP
	Aaron S Kaichi, MD
	Scott D Hoskinson, MD
	Benjamin A Tamura, MD

Years	Member
30+	Rae N Teramoto, MD
	Clayton Chong, MD
	Arnold F Jacobson, MD
	Grace R Inouye, MD
	MAJ Alan T Lau, MC USAF
	Erlaine F Bello, MD FACP
	Michael Bornemann, MD FACP
	Osamu Fukuyama, MD FACP
	Aaron H Morita, MD FACP
	Ken C Arakawa, MD FACP
	Arlene H Minami, MD
	Kheng See Ang, MD
	Steven S Azuma, MD FACP
	Paul J Carry, MD
	Sukchai Satta, MD FACP
	Benjamin W Berg, MD FACP

Years	Member
30+	Louis C Tripoli, MD
	Alvin N Furuike, MD FACP
	Yuri Imanishi, MD
	Aaron K Nada, MD
	Janet K Onopa, MD FACP
	Russell D Wong, MD
	Timothy E Fern, MD
	Dennis W Boulware, MD FACP
	William C Seal, MD FACP
	Stephen H Denzer, MD FACP
	Robin L Seto, MD FACP
	Ronald A Morton, MD

Members Retired/Pending Retirement -

Jonathon Cho, MD, FACP – December 31, 2020
Janet K. Onopa, MD, FACP – June 30, 2021

Our Healthcare Heros….

We at the ACP Hawaii Chapter would like to recognize the many dedicated hospitalists and intensivists of our inpatient medical facilities- the hospitals of Hawaii Pacific Health, Kaiser Moanalua Hospital and The Queen's Medical Center - who have borne the brunt of caring for COVID-19 patients during this pandemic.

As fellow physicians, we understand the time commitment but we also appreciate the toll it has taken on the physical, mental, and emotional health and well-being of those intimately involved with the day-to-day care of seriously ill COVID-19 patients. They have been and continue to be the resolute silent heroes.

We thank you for your continued work and dedication.

2021 ACP Meeting Schedule

7:50 a.m. (10 minutes)
Governor's Welcome
Lisa A. Camara, MD, FACP

Program Co-Chairs
Samuel J. Evans, MD, FACP
Kuo-Chiang Lian, MD

8:00 a.m. (60 minutes)
Session #1 – "The New York COVID-19 Pandemic Experience" - Maria Carney, MD – ACP NY Governor and Alex C Spyropoulos, MD, FACP, FCCP, FRCPC

9:00 a.m. (30 minutes)
Podium Presentations (2)
Moderator: #1 James Epure, MD, FACP

9:00 a.m. – Michael Meno, MS
Telehealth Amid the COVID-19 Pandemic: Perception of Asian, Native Hawaiian, and Pacific Islander Cancer Patients

9:15 a.m. – Tyler Thorne, MS
A Situational Analysis of Telehealth in Palau and Future Recommendations

9:30 - 10:15 a.m. (45 minutes)
Session #2 – Panel Discussion: "Clinical Pandemic Response to COVID-19"
Moderator: #2 Philip Verhoef, MD, FACP

Aimee Grace, MD
James Ireland, MD
Scott Miscovich, MD

10:15 a.m. – 10:45 a.m. (30 minutes)
Break/Poster Viewing online

10:45 a.m.
Podium Presentation (2)
Moderator: #3 Jason Sapp, MD, FACP

10:45 a.m. – Matthew Kobylinski, MD
The Novel Association of DNA viruses with Helicobacter Pylori in Gastric Carcinogenesis

11:00 a.m. – Gene Yoshikawa, MD
Disaggregating Data on Pacific Islander Gastric Cancer Patients Reveals Survival Disparity

11:15 a.m. (5 minutes)
"COVID-19 State of Hawaii Update"
Joshua Green, MD - Lt. Governor, State of Hawaii

11:20 a.m. (45 minutes)
Session #4 – "The Hawaii COVID-19 Testing Journey"
A. Christian Whelen, PhD, D(ABMM)
Amy Woron, PhD

12:00 p.m. (45 minutes)
Dr. Irwin J. Schatz, MD, MACP Lectureship – **"COVID-19 Pandemic Response"**
Sarah Kemble, MD, FACP

1:00 p.m. (30 minutes)
Business Meeting/Lunch/Poster Viewing online

1:30 p.m. (30 minutes)
Podium Presentation (2)
Moderator: #4 Kalani Brady, MD, MACP

1:30 p.m. - Stephanie Cornell, MD
Disparities and Determinants of Health Among Native Hawaiian Diabetic Patients at Queen Emma Clinic

1:45 p.m. - Vasant Patwardhan, MS
FOXO3 Genotype and Mortality After First Myocardial Infarction in Old Age: The Kuakini Honolulu Heart Program

2:00 p.m. (45 minutes)
Session #5 – **"Research Update on Therapies for COVID-19"** - Stephanie Guo, MD

2:45 p.m. – 3:15 p.m. (30 minutes)
Break/Poster Viewing online

3:15 p.m. (30 minutes)
Podium Presentation (2)
Moderator: #5 Elizabeth Tam, MD, FACP

3:15 p.m. - Patrycja A Ashley, MD
Prior Hepatitis B Exposure – An Independent Risk Factor for the Development of Liver Cancer in Patients with Chronic Hepatitis C

3:30 p.m. – Jessica Shiosaki, MS
Serum Diagnosis of Early CRC in the Multiethnic Cohort

4:00 p.m. **(45 minutes)**
Awards/Doctors Dilemma/Breakout Rooms

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September 1, 2020

Lisa A Camara, MD FACP
1624 Kuhilani St
Honolulu HI 96821-1430

Dear Dr. Camara,

It is a great pleasure to recognize the leadership, energy, and inspiration you have given so willingly to the American College of Physicians and the Hawaii Chapter. You have been an outstanding leader of the Hawaii ACP Chapter, representing your members' views in Board of Governors discussions.

Your term as Governor has been as valuable to the national organization as it was to your chapter. The consistent commitment shown to excellence and professionalism by leaders such as you enables our College to remain strong and successful. Your responsibilities as Governor have been handled with great distinction, always helping us to stay focused on our patients.

During your term as ACP Governor, the Hawaii Chapter's overall membership grew 3%! The Chapter was the recipient of the Bronze Tier of the Chapter Excellence Award in 2019 and 2020. You were instrumental in leading the chapter's efforts in creating the Roc-the-Doc program which was met with resounding success, being awarded multi-year funding from ACP National. The Chapter also created both a new Point of Care Ultrasound Committee and Training Course!

Although your term as Governor is coming to a close, we hope you will continue to share your enthusiasm and expertise with the College.

Thank you so much for your commitment to internal medicine, our patients, and the American College of Physicians.

Warmest regards,

Jacqueline Winfield Fincher, MD, MACP
ACP President

Darilyn V. Moyer, MD, FACP
Executive Vice President /CEO

Heather E. Gantzer, MD, FACP
Chair, Board of Regents

William E. Fox, MD, FACP
Chair, Board of Governors

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PODIUM PRESENTATIONS

9:00 am Podium

Telehealth Amid the COVID-19 Pandemic: Perception of Asian, Native Hawaiian, and Pacific islander Cancer Patients

Michael Meno, MS[1], Justin Abe, MS[2], Jami Fukui MD[3],
Christa Braun-Inglis, MD[3], Jared Acoba, MD[3,4,5]
[1]University of Hawaii, John A Burns School of Medicine, Honolulu, HI
[2] University of Southern California, California
[3]University of Hawaii, Cancer Research Center, Honolulu, HI
[4]University of Hawaii, Department of Medicine, Honolulu, HI
[5]Queen's Medical Center, Honolulu, HI

Background: The COVID-19 pandemic has accelerated the implementation of telehealth in oncology practice. Prior to the pandemic, telehealth was traditionally used for the delivery of health care services where distance was a critical factor. At present, the majority of oncology patients are being converted to telehealth visits. It is uncertain whether these patients, who view face-to-face as the standard of care, will express the same perceptions of telehealth. Furthermore, telehealth has not been extensively studied in indigenous populations such as Native Hawaiians who may have different experiences with the modality.

Objective: This study aimed to assess the perceptions of telehealth visits of a multi-racial cancer population during the COVID-19 pandemic.

Methods: This study was conducted at outpatient cancer clinics in Hawaii between March 2020 and August 2020. Patients were invited to participate in the survey either by phone or email. Factors associated with satisfaction and preference for telehealth were identified using multivariate logistic regression.

Results: Of the 212 survey respondents, 61.3% were Asian, 23.6% were White, and 15.1% were Native Hawaiians or Pacific Islanders. Overall, 65.6% of patients perceived the overall quality of their telehealth visit to be equivalent or better than office visits, while only 57.1% of patients had a preference for wanting some future visits to be telehealth. Asians (odds ratio [OR] 0.26, 95% CI 0.10-0.71) and Native Hawaiians or Pacific islanders (OR 0.19, 95% CI 0.05-0.66) were less likely to desire future telehealth visits compared to Whites. Predictors for preferring future visits included lower income (OR 3.85, 95% CI 1.35-10.30) and hematopoietic cancers in which the physical exam was less pertinent (OR 4.99, 95% CI 1.13-22.08). The inclusion of video significantly enhanced the quality of the visit (OR 2.22, 95% CI 1.12-4.38).

Conclusions: The perceived quality of the telehealth visits and desire for future telehealth visits were not uniform across different patient populations. We found disparities in preference for telehealth in a multi-racial cancer population. Future studies aimed to overcome these racial disparities are needed to provide equitable oncology care through telehealth.

9:15 am Podium

A Situational Analysis of Telehealth in Palau and Future Recommendations

Tyler Thorne, BA[1], Maiya Smith, BS[1], and Gregory Dever, MD
[1]University of Hawai'i, John A Burns School of Medicine
[2]Area Health Education Center of Palau

Introduction: In December 2017, the Republic of Palau installed undersea fiber optic cables, allowing the country to access high speed internet for the first time. With this advancement, came the potential for growth in telehealth initiatives. In a country as geographically isolated as Palau, with poor access to specialists and resources, telehealth has the potential to drastically change how healthcare is delivered. Currently, the status of telehealth in Palau is unknown. The intent of this study is to analyze what telehealth resources are being utilized at the Ministry of Health (MOH) and private practitioners in Palau and to examine potential future directions for telehealth.

Methods: Employed staff at the Belau National Hospital in Koror, Palau were interviewed to assess the current status of telehealth and future directions desired. This included physicians, IT personnel, public health department members, department managers of allied health, and telehealth resource experts in the Pacific. In total, 34 people were interviewed. Standardized questions and surveys were conducted in person throughout the month of July 2019.

Results: It was found that all departments utilize some form of telehealth. However, there are no policies, initiatives, or incentives for telehealth in the MOH, and all current telehealth programs are run by individuals. The most common forms were live video conferencing (57%) and store and forward (57%). The most common reasons for wanting telehealth were for diagnosis/treatment (71%) and consultation/follow up (86%). Every department cited needing more electronic equipment for telehealth utilization. Common needs identified for the advancement of telehealth included: need of a telehealth champion and facilitator, successful distance learning for axillary staff, having a dedicated telehealth clinical space, technological help for staff, and better telehealth communication with outer rural clinics.

Discussion: As a whole, there are numerous distance learning and telehealth opportunities available. Through this research, several key needs have been identified to promote a successful and widespread telehealth program. These needs included a telehealth champion, who promotes the adoption of these telehealth resources; a telehealth facilitator, who provides administrative support for telehealth resources available; distance learning programs that can promote local education and upskilling of staff; dedicated telehealth clinical spaces to increase ease of consultations and patient care; and improved telehealth communication to rural clinics to aid in care for those further from the main hospital. Through identification and addressing these needs, Palau is in a position to further develop its own programs and serve as an example of telehealth's potential in the Pacific.

10:45 am Podium

The Novel Association of DNA Viruses with Helicobacter Pylori in Gastric Carcinogenesis

Matthew Kobylinski, MS[1]; Karolina Peplowska, PhD[2];
Maait Tiirikainen, PhD[2]; Xiufen Li, Phd[2]; Youping Deng, PhD[3]; Scott Kuwada, MD[3,4].
[1]University of Hawaii, John A. Burns School of Medicine, Honolulu, HI
[2]University of Hawaii Cancer Research Center, Honolulu, HI
[3]University of Hawaii, Department of Quantitative Health Sciences, Honolulu, HI
[4]University of Hawaii, Department of Medicine, Honolulu, HI

INTRO: Gastric adenocarcinoma, gastric MALT lymphoma and gastrointestinal stromal tumor (GIST) are gastric cancers associated with Helicobacter pylori infection. Although it is estimated that half the world is infected with H. pylori only 1-2% of those infected develop gastric cancer. Furthermore, there are countries such as Brazil and India where H pylori infection is highly prevalent but gastric cancer rates are relatively low compared with most countries where H pylori is endemic.

HYPOTHESIS: These facts raise the possibility that there are co-factors that act in concert with H pylori to cause gastric cancers. While H pylori is the only bacteria considered a human carcinogen, many viruses are strongly associated with various human cancers.

AIMS: We sought to identify DNA viruses associated with H pylori infection in patients with GIST.

METHODS: DNA was purified from formalin-fixed and paraffin-embedded tissue samples from 18 GIST cases and 6 controls (gastritis only). For detection of H pylori, 5 unique H pylori genes (HP1177, 16S rRNA, iceA, ureB and vacA) were detected by PCR. For detection of viral sequences a next generation sequencing approach was utilized: The DNA was amplified using PCR and a set of viral sequence primer sets (over 600,000) that are designed to detect 1,160 viruses. The DNA amplicons contain adapters that allow extraction of the amplified DNA sequences using streptavidin-biotin affinity chromatography. The captured amplified DNA samples are then quantified and sequenced using quantitative PCR. The resulting amplified viral DNA sequences were then matched to known viral sequences in public databases and the degree of statistical significance of the matches determined. Statistical methods used: edgeR normalization; Mann Whitney U-test.

RESULTS: Hpylori infection was determined to be present by PCR in 13/18 GIST cases and 5/6 controls. Six viruses were significantly associated with H pylori infection compared to those without infection. One of the six viruses, Human beta-Herpesvirus 6B, was significantly associated (adjusted p-value < 0.05) with H pylori infection and GIST vs controls.

CONCLUSIONS: This is the first study to challenge the current dogma that H pylori alone is responsible for gastric tumorigenesis. Using a pan-viral Nextgen sequencing-based approach for DNA viruses, we identified a highly significant association between H pylori and Human beta-Herpesvirus 6B in patients with GIST vs GIST and controls without H pylori. Human beta-Herpesvirus 6B has previously been significantly associated with various human cancers (Hodgkin lymphoma, gastrointestinal cancers, glial tumors, and oral cancers). It is possible that viruses are important co-factors for H pylori in gastric tumorigenesis and these results provide the impetus for larger studies.

11:00 am Podium

Disaggregating Data on Pacific Islander Gastric Cancer Patients Reveals Survival Disparity

Gene T. Yoshikawa, MD[1], Nicholas Simon, MS[2]
Ryon K. Nakasone, MD[3], Jared D. Acoba, MD[3,4]
[1]University of Hawaii Internal Medicine Residency Program, Honolulu, HI
[2]University of Hawaii, John A. Burns School of Medicine, Honolulu, HI
[3]University of Hawaii, Department of Medicine, Honolulu, HI
[4]University of Hawaii, Cancer Research Center, Honolulu, HI

Purpose:
Gastric cancer continues to be a major health issue worldwide. A particularly high prevalence of gastric cancer has been seen amongst Asians, yet Asian patients experience improved survival compared to other patients of other races. The prognosis of Pacific Islanders with gastric cancer, however, is not well documented as previous studies have aggregated Pacific Islanders with Asians. The purpose of our study was to describe patient and tumor characteristics, as well as prognostic factors of Pacific Islanders with gastric cancer.
Methods: Patients diagnosed with gastroesophageal junction or gastric adenocarcinoma between 2000 and 2014 were identified in the tumor registry of the Queen's Medical Center. Race was self-reported by the patient and documented in the Oncology Data Registry. Overall survival of Asians, Whites, and Pacific Islanders was calculated using the Kaplan-Meier method and log-rank test. Cox proportional hazards regression models were constructed to assess predictors of survival adjusting for clinical and pathological factors.

Results:
A total of 615 patients were included in the final analysis. Pacific Islanders were found to present at a younger age, were more often uninsured or had Medicaid insurance, and were diagnosed with a higher stage of cancer compared to their Asian and White counterparts. Pacific Islanders were also less likely to undergo surgery even after adjusting for stage. Median survival was 9.4 months for Pacific Islanders, 22.7 months for Asians, and 18.0 months for Whites ($p=0.036$). In a multivariate model that did not include treatment, Pacific Islander patients demonstrated inferior survival compared to Asians. However, when the model was adjusted for treatment (surgery and chemotherapy), Pacific Islander race was no longer a significant prognostic factor ($p=0.167$).

Conclusions:
We present an analysis of the largest cohort of Pacific Islander gastric cancer patients reported to date. In an unadjusted analysis, Pacific Islanders had a shorter overall median survival compared to Whites and Asians, however, after adjusting for treatment, race was no longer a predictor of survival. Further study into the reason for racial differences in treatment is warranted and could lead to interventions that improve gastric cancer outcomes for Pacific Islanders. In addition, we demonstrated appreciable differences between Asian and Pacific Islander gastric cancer patients, and greatly emphasize the importance of disaggregating and independently studying these two very distinct populations in future studies.

1:30 pm Podium

Disparities and Determinants of Health Among Native Hawaiian Diabetic Patients at Queen Emma Clinic

Stephanie Cornell, MD[1], James Yess, MD[2,3], Nani Morgan, MD[3],
Roxanne Jaudon, BA, MS (expected May 2021)[3]
[1]University of Hawaii Internal Medicine Residency, Honolulu, HI
[2]University of Hawaii, Department of Medicine, Honolulu, HI
[3]The Queen's Medical Center, Queen Emma Clinic, Honolulu, HI

The "Kilolani Clinical Pilot", a chronic disease management program, was launched in 2019 at Queen Emma Clinic (QEC) in partnership between QEC and the Department of Native Hawaiian Health to better serve Native Hawaiian patients with diabetes. To fully characterize this sub-set of our Native Hawaiian population we created a database to track clinical characteristics, care utilization, social determinants of health, and barriers to care. From this "population snapshot" we then intend to create creative, culturally sensitive interventions which are guided by evidence- based medicine and clinical pathways.

Baseline data on 127 qualifying patients were collected using retrospective chart review and automated Clarity reports, in addition to supplemental holistic patient interviews. Data of interest included BMI, blood pressure, A1C, emergency room visits, inpatient visits, PCP clinic no show rates, medical insurance type, comorbid medical conditions, and social determinants of health (SDOH). SDOH included history of homelessness, incarceration, transportation issues, violence or abuse, food insecurity, and substance abuse. These de-identified data were organized into usable spreadsheets and then basic statistics through Excel were used to define mean, median, mode, range, and percent of total for each category.

The average age was 58 with standard deviation of 11.3. Average A1C of the population was 8.18%, and range was 4.7% to 16.9%. Total inpatient visits were 50, total no show visits was 270, and Medicare or Medicaid was the primary payor for 125 out of 127 patients. The rates of comorbid conditions are as follows: 84% have comorbid hypertension, 41.7% are insulin-dependent, 7.9% have end stage renal disease, 26% have congestive heart failure, 63.8% have history of tobacco use, and 40.9% have a psychiatric illness. The rates of comorbid SDOH are as follows: 36.2% have history of homelessness, 33.1% have history of food insecurity or are on Supplemental Nutrition Assistance Program, and 33% have history of methamphetamine abuse.

The comorbid conditions, as well as the impressive social barriers and substance abuse in this population were significant and undoubtedly contribute to the poor diabetic health of our population. Many of the disproportionate preventable comorbidities portend a worse prognosis with this patient population, compared to the general population. From this data, we better understand the "gaps" in clinical care, the limitations of current clinical resources, and the potential impact targeted interventions might create. We can utilize these lessons to expand chronic disease management into other arenas within Native Hawaiian Health and to other Pacific Islanders at Queen Emma Clinic.

1:45 pm Podium

FOXO3 Genotype and Mortality After First Myocardial Infarction in Old Age: The Kuakini Honolulu Heart Program

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Introduction: The G allele of the FOXO3 single nucleotide polymorphism (SNP) rs2802292 is consistently associated with increased lifespan in multiple populations. It also reduces risk for CHD mortality in older Japanese American men. We investigated the mortality protection conferred by the FOXO3 G allele after having a first myocardial infarction (MI) in old age.

Methods: The Kuakini Honolulu Heart Program is a prospective cohort study of cardiovascular disease (CVD) in Japanese-American men in Hawaii that started in 1965. The fourth exam (1991-93) was conducted in 3,741 men ages 71-93 years. Our analytic sample (N=164) included having a first MI after exam 4 through December 1999, survival greater than 1 month after first MI, and availability of FOXO3 genotype data. Follow up for all-cause mortality was until December 2019 (up to 29 years). We studied the effect of FOXO3 G allele carriers (heterozygous or homozygous) on all-cause mortality.

Results: Age-adjusted mortality rates showed a significant protective effect in those with FOXO3 G genotype compared to those without (179.2 vs. 209.2 per 1,000 person years follow up, p=0.02). Average age of first MI was similar in the two groups, but those with FOXO3 G genotype had a significantly higher age of death (88.1 vs. 85.7 years, p=0.007). Using General Linear Models, we found no significant differences in CVD risk factors between FOXO3 G allele carriers and non-carriers, except higher rates of current smoking among those with the FOXO3 G genotype. Cox regression adjusting for age at initial MI found that presence of the FOXO3 G allele conferred a risk reduction of 32% (RR=0.68, 95% CI=0.50-0.95, p=0.02). After additional adjustment for CVD risk factors, the FOXO3 G allele conferred a risk reduction of 44% (RR=0.56, 95% CI=0.39-0.80, p=0.002).

Conclusions: The FOXO3 G allele (minor allele of SNP rs2802292) confers a significant reduction in mortality after a first MI in older Japanese-American men. These findings suggest another avenue by which FOXO3 contributes to longevity, and also support further research of the FOXO3 gene and protein in its potential role in cardiac repair and regeneration after myocardial infarction.

3:15 pm Podium

Prior Hepatitis B Exposure – An Independent Risk Factor for the Development of Liver Cancer in Patients with Chronic Hepatitis C

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Introduction: Liver cancer is the second leading cause of cancer-related death worldwide and the most rapidly increasing cancer in the US. It is estimated that 50% of US liver cancer cases are related to underlying hepatitis C (HCV) infection. Though the prevalence of chronic HCV infection in Hawaii appears similar to that of other states, Hawaii has among the highest rates of liver cancer in the US, possibly due to the high prevalence of hepatitis B infection. Although active hepatitis B and hepatitis C infections rarely co-exist, occult hepatitis B infection (OBI)—the presence of hepatitis B core antibody (HBCAB) in the absence of hepatitis B surface antigen, reflecting prior hepatitis B exposure with immunologic control—is common in HCV-infected cohorts. Whether OBI plays a significant role in the development of liver cancer among HCV-infected patients is a matter of active debate.

Methods: We conducted a retrospective study of all patients with a history of chronic HCV infection in the Kaiser Permanente Hawaii database between 2004 and 2020. Comparisons of demographic and clinical characteristics (including age, race, smoking history, gender distribution, BMI, HCV genotype, OBI and 5-year survival) between patients with and without liver cancer were conducted using chi-square and t-tests as appropriate. Multiple logistic regression was used to identify factors independently associated with liver cancer, using alpha=0.05.

Results: Of 3,198 patients with a history of chronic HCV infection, 159 were diagnosed with liver cancer and 79 were diagnosed with OBI. The prevalence of OBI among patients with liver cancer was 49.7% compared with 28.0% among those without liver cancer. Male gender (OR 2.02, 95% CI 1.34-3.06), Asian race (OR 1.78, 1.16 - 2.74) and OBI (OR 1.76, 95% CI 1.25 - 2.49) emerged as strong predictors of liver cancer among patients with chronic HCV infection in multivariable regression analysis. A history of diabetes (OR 1.56, 1.07 - 2.27) and older age at the time of HCV diagnosis (1.19, 1.09-1.29) also emerged as significant, though less powerful associations. No other factors differed significantly between HCV-infected liver cancer patients with or without OBI.

Conclusions: OBI was identified as a strong, independent predictor of liver cancer in HCV-infected patients, distinct from Asian race and ranking above such established risks for HCC as diabetes and age. HCV-infected patients with liver cancer and OBI did not differ significantly in demographics or survival from patients with liver cancer and HCV infection without OBI, suggesting a directly carcinogenic role for OBI among HCV-infected individuals. These findings may have important implications for predicting the risk of liver cancer in those with chronic HCV infection, and thus to helping refine liver cancer screening algorithms.

3:30 pm Podium

Serum Diagnosis of Early CRC in a Multiethnic Cohort

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Only about 70% of eligible US patients are up to date with colorectal cancer (CRC) screening. Screening colonoscopy, the gold standard, is invasive and expensive. Stool based tests lack sensitivity and can be repulsive to some (study of 63,500 Kaiser patients showed only 53% completion). Blood tests could offer a more palatable alternative CRC screening modality and thereby increase screening rates. DNA and RNA species released by cancer cells can be detected in the blood of cancer patients using sensitive and widely available molecular technologies.

AIMS: To compare the rates of detection of CRC-associated DNA and RNA alterations in serum samples from CRC cases and controls in a multiethnic cohort.

METHODS: Serum samples from a multiethnic cohort of 73 CRC (stages I-IV) (83% Asian, 12% white, 4% Hawaiian/Pacific Islander, 1% Black), cases and 18 controls were examined for DNA and RNA alterations associated with CRC. Pyrosequencing and digital PCR were used to detect oncogenic mutations in KRAS, TP53, BRAF and APC in cell-free DNA (cfDNA) purified from serum for 24 CRC cases (stages I-IV). Septin 9 (SEPT9) gene promoter hypermethylation was detected by qPCR of metabisulfite treated serum samples. The expression levels of miR-21, miR-29a, miR-92a, and mi-221, which have been shown to be aberrantly expressed in cancers, were measured by quantitative RT-PCR of total RNA purified from microvesicular (V) or extravesicular (EV) fractions in serum samples.

RESULTS: Pathogenic mutations were found in cfDNA in only 7 of the 24 (29%) CRC cases: KRAS=4, TP53=2 and BRAF=1. No APC mutations were found despite this being the most common mutation (80%) found in CRC. SEPT9 promoter methylation, a commercially available CRC blood test, was previously shown to have a sensitivity for CRC approaching 70%. Unfortunately, only 10 of 94 (10.6%) CRC cases were positive for this marker in our study. Importantly, only 7-13% of early stage (I-II) CRC were detected with this method.
The ratios of the levels of EV to V levels of miR-21, miR-29a, and miR-92a, but not miR-221, were significantly higher for early stage (I-II) as well as late stage (III-IV) CRC versus controls. The AUC for miR-21 was 0.76 in differentiating all stages of CRC versus controls and 0.73 in differentiating CRC stages I-II from controls. These are the first results reported for these miR's in a multiethnic population.

CONCLUSIONS: Characteristic DNA alterations found in CRC were detected at low rates. However, we found novel and significant overexpression of miR's -21, -29a, and -92a in the serum (extravesicular fraction) of early and late stage CRC cases vs controls. Importantly, these miR's were able to significantly detect early stage CRC which raises the promising possibility of using these miR's as CRC screening blood tests in ethnically diverse populations.

POSTER PRESENTATIONS

Poster #1

Severe Hepatosteatosis Brought on by Strongyloides Stercoralis Hyperinfection

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Introduction: Strongyloides stercoralis is a soil-transmitted nematode endemic to tropical areas including Micronesia. The unique life cycle of this parasite allows for an autoinfection process, resulting in cyclical, longstanding infections. Clinical presentation is commonly asymptomatic or includes non-specific gastrointestinal symptoms, which together with a low parasite burden and irregular larval output can make diagnosing this infection a challenge. In an infected host who is immunocompromised, the dynamics of uninterrupted autoinfection may lead to a steady surge in parasite burden, putting patients at risk for hyperinfection, subsequent dissemination, and potentially death.

CASE: A 48-year-old Micronesian male with history of severe psoriasis treated with systemic and topical steroids, presented with generalized weakness, 20-pound weight loss and eight weeks of non-bloody diarrhea. Patient had relocated to Hawaii from Chuuk 2 months prior, at presentation patient was wheelchair bound due to severe generalized weakness. Physical exam was remarkable for scleral icterus, dystrophic changes of fingernails and toenails, widespread erythematous, scaly papules, scattered on the entire body including his scalp and face. There were no serpiginous, urticarial or purpuric lesions present. The patient previously worked on a farm in Chuuk, but his social history was otherwise unremarkable. His laboratory findings showed microcytic anemia (Hgb 7.8 gm/dL), thrombocytopenia (platelets 57 x 103/mcL), leukocytosis (WBC 15.6 x 103/mcL), 8% bands, severe hyponatremia (Na 114 mmol/L), malnutrition (albumin 1.8 g/dL, prealbumin 10 mg/dL), and abnormal liver function tests (bilir ubin 6mg/dL, ALT 189 U/L, AST 293 U/L, alkaline phosphatase 1590 U/L). Extensive diarrhea workup was negative, including Strongyloides IgG, stool ova and parasite, and HIV antigen/antibody. PPD was negative. CT of the abdomen and pelvis revealed new severe steatohepatitis and moderate ascites. MRI cholangiography was negative for cholecystitis or choledocholithiasis. Hepatitis type B and C serologies were negative for active infection. Liver biopsy was performed and revealed severe macrovesicular steatosis, cholestasis and mild mixed portal inflammation with eosinophilic infiltrate. No significant fibrosis or iron deposition was appreciated. Pathology samples obtained on EGD and colonoscopy confirmed extensive Strongyloides infection with gastric, duodenal, and colonic involvement. Patient was diagnosed with Strongyloides hyperinfection and oral ivermectin therapy was initiated. Repeated Strongyloides serology remained negative.

Discussion: The acute hepatosteatosis in our patient was most likely due to severe malnutrition and malabsorption form Strongyloides hyperinfection. The degree of cholestasis noted on liver biopsy may also be due to biliary obstruction from Strongyloides as has been occasionally reported in severe strongyloidiasis. Malnutrition as well as chronic immunosuppressive treatment may result in the host's inability to produce immunoglobulins against the parasite hence the repeatedly negative serology in our case. High index of suspicion should prompt further evaluation with molecular diagnostic methods that might be preferred in such cases.

Poster #2

Triad of Brain Abscess, Bacteremia and Infection Endocarditis Due to Streptococcus Sanguinis

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Introduction:
Streptococcus sanguinis, gram-positive coccus, is the most abundant bacterial genus in the human oral cavity that has been widely associated with the development of infective endocarditis (IE). While the association of Streptococcus sanguinis with bacterial endocarditis is well described in the literature, we present the first described case to include a triad of brain abscess, bacteremia, and infective endocarditis (IE).

Case Report:
A 62-year-old Korean veteran with severe dental caries and past medical history significant for alcohol use disorder with hepatic steatosis presented with altered mental status. The patient was lethargic on presentation, but able to communicate symptoms of headache. Vital sign on presentation BP: 143/91; HR: 68; RR: 16; T: 98.2 °F; SpO2: 99%. On physical exam: patient was somnolent with positive nuchal rigidity. Neuro exam limited due to metal status. Laboratory evaluation showed WBC count of 19, lactate 1.4, procalcitonin 0.42, COVID and HIV negative. Brain MRI, demonstrated a 2.5 x 1.7 x 3.7 cm mass in the left frontal lobe with peripheral enhancement consistent with abscess. Empiric treatment initiated with piperacillin/tazobactam and soon after transitioned to vancomycin, metronidazole, and ceftriaxone. Following left frontal craniotomy for abscess drainage, the patient subsequently developed intracerebral hemorrhage and syndrome of inappropriate antidiuretic hormone secretion. Transthoracic echocardiogram revealed mitral valve regurgitation with a posterior mitral valve leaflet vegetation. Blood and brain abscess fluid cultures grew Streptococcus sanguinis. Histological analysis of the brain tissue showed parenchyma abscess, granulation tissue, and gliosis. Antimicrobial therapy continued with ceftriaxone 2 gm IV q12hrs, led to a clinical recovery. The patient was evaluated by oral and maxillofacial surgery for a likely nidus of infection from chronic periapical dental caries at the tips of root numbers 6 and 9 with recommendation for extraction.

Discussion:
The patient's Streptococcus sanguinis brain abscess was likely secondary to the oral dental caries leading to bacteremia, infective endocarditis and ultimately seeding the brain and resulting in his abscess. From our understanding this is the only report of Streptococcus sanguinis presenting as a triad of bacteremia, endocarditis, and brain abscess. Streptococcus pneumoniae infection also has an associated triad described as meningitis, endocarditis and pneumonia known as Austrian syndrome. Austrian syndrome has similarly also been identified in patients with history of alcohol abuse, male sex and advance age. Given the high degree of associated fatal complications with Streptococcus sanguinis infection, clinicians should carry a high degree of suspicion for this organism when these patterns arise.

Poster #3

Extraperioteneal Bladder Rupture Presenting as a Pseudo-Acute Kidney Injury

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Acute elevation in serum creatinine usually represents a reduction in the kidney's glomerular filtration rate. This case describes a rare perioperative complication that led to a pseudo-acute kidney injury with a sharp rise in serum creatinine unrelated to renal function.

An 86-year-old man underwent an elective robot assisted bilateral inguinal hernia repair at a neighboring hospital. Later that same day, he returned to the neighboring hospital's emergency room with complaints of scrotal swelling and abdominal pain. CT imaging with intravenous contrast was consistent with postoperative changes and the patient was discharged home as his pain had improved. However, by the next morning his symptoms had progressed, and presented to our facility's ER for further evaluation.

Physical exam was most notable for edematous ecchymotic scrotum with mild generalized tenderness to palpation. Additionally, had mild abdominal distension with mild tenderness to palpation to lower abdominal quadrants. Initial evaluation suggested scrotal edema/pain was consistent with expected postoperative changes, which was supported by imaging. Initial serologic workup was most notable for a serum creatinine of 2.7 mg/dL, a rise from 1.3 mg/dL measured at the neighboring facility the previous night. The patient was bolused one liter of isotonic fluid with associated downtrend of serum creatinine to 2.3mg/dL supporting a prerenal etiology of acute kidney injury. He was admitted to the internal medicine service for further monitoring and fluid support. A repeat renal panel was performed 12 hours following admission which demonstrated now up trending serum creatinine back up to 2.7 mg/dL. At this point a CT without contrast was obtained to assess for any postrenal obstructive etiology. It demonstrated extravasation of old contrast from the bladder layering within the right hemipelvis - the contrast observed on CT was residual contrast from his previous study 24 hours prior. A subsequent CT cystography was performed which confirmed a right sided extraperitoneal bladder rupture. Foley was placed, and within 24 hours the patient's serum creatinine returned to baseline 0.9 mg/dL. He was discharged with no residual pain, improved swelling, and normal laboratory values. This case demonstrates a rare cause of falsely elevated serum creatinine in the setting of normal renal function. As urine extravasates from the bladder some is reabsorbed via the systemic and hepatic systems thus falsely raising serum creatinine. The diagnosis in this case is further supported with the rapid resolution observed following Foley placement. Recognition of this rare perioperative complications may prevent delayed diagnosis and unnecessary fluid resuscitation in the setting of acute rise in serum creatinine.

Poster #4

Starvation Ketoacidosis with Severe Anion Gap Metabolic Acidosis due to Intermittent Fasting and Ketogenic Diet

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Introduction:

Intermittent fasting and the ketogenic diet have become increasingly popular diets, especially for young active duty military members. While ketosis is the goal of the ketogenic diet, it rarely results in ketoacidosis. Intermittent fasting combined with the ketogenic diet can lead to starvation ketoacidosis. In a literature review, these cases resulted in only mild acidoses. We present a case of severe anion gap and osmolar gap metabolic acidosis due to the combination of intermittent fasting and the ketogenic diet.

Case Presentation:

A 36-year-old male with history of thyroid cancer status post total thyroidectomy and unprovoked deep venous thrombosis presented with two days of nausea, vomiting, and diarrhea in the setting of following a combined intermittent fasting and ketogenic diet for one week. He reported fasting for 22 hours a day and consuming all his calories within the remaining two hours of the day. His consumption during the two hours adhered to a ketogenic diet. Additionally, he consumed two to three store bought liquor drinks during these breaks from fasting. On presentation, his physical exam was noteworthy for sinus tachycardia and normal mental status. Laboratory evaluation revealed a pH of 7.08 on venous blood gas, bicarbonate of 7 mEq/L, anion gap of 25, osmolar gap of 22, and moderate serum ketones. His glucose was 131 mg/dL, lactate was 1.3 mmol/L and ethanol level was undetectable. He was admitted to the intensive care unit for severe metabolic acidosis and treated with fl uids, electrolyte repletion, and a bicarbonate drip. His symptoms and lab abnormalities resolved over 24 hours.

Discussion:

Extreme dieting is gaining more popularity, particularly in young military members. There are many well-known complications that result from these diets, especially intermittent fasting and the ketogenic diet, including ketoacidosis. However, it is rare to see starvation ketoacidosis with these diets alone and even more rare for this to lead to severe acidosis requiring bicarbonate therapy and ICU admission.

Conclusions:

When patients are found to have a severe (pH < 7.10) anion gap metabolic acidosis, the differential must be broad and include the most common causes – diabetic ketoacidosis, lactic acidosis, uremia, aspirin or iron overdose, toxic alcohol ingestion, and starvation. While starvation ketoacidosis is usually seen in post-operative patients, the elderly, or patients with anorexia, extreme dieting should be considered and is not precluded by a severe acidosis or an osmolar gap.

Poster #5

A Case of Ahi Basking in the Sun: Scombroid Poisoning-Associated Lactic Acidosis

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Introduction:

Scombroid poisoning is a rare condition however it remains present in Hawaii. The symptoms often overlap with an allergic reaction and anaphylaxis. While the clinical spectrum of disease varies, severe symptoms of scombroid poisoning may certainly develop. Scombroid poisoning is a potentially lethal condition, and should be considered as a differential diagnosis.

Case presentation:

A 54-year-old woman with a past medical history significant for hypertension and hyperlipidemia presented to the emergency room three hours after the onset of flushing, epigastric pain, chest pain, dizziness and lightheadedness after eating smoked ahi that was prepared by a friend. She checked her blood pressure at home and noted her SBP was in the 80s. She endorsed flushing, redness of eyes, chills, abdominal pain that moved to her chest, nausea and urge to vomit at home. No family members who ate the same fish had similar symptoms.

Vital signs were significant for tachycardia and hypotension On physical exam, her skin was warm to touch with diffuse flushing of her face, trunk, extremities and back. Her labs were significant for a lactic acid of 4.8, which subsequently increased to 5.5. Serum tryptase was not drawn due to the timing of presentation. Despite aggressive fluid resuscitation, the patient's blood pressure remained low. Her symptoms were noted to gradually improve after administration of famotidine and benadryl. Her lactic acid subsequently normalized. Based on her history, physical, and improvement with antihistamines, the patient was diagnosed with a severe case of scombroid poisoning.

Discussion:

In this report, we outline a case of scombroid poisoning with severe symptoms and lactic acidosis. Because the symptoms of histamine are similar to that of IgE-mediated food allergy, scombroid poisoning is often misdiagnosed and underreported. The presentation is also variable with some serious complications reported including vascular compromise, bronchospasm, arrhythmias, vasospasm, cyanosis, hypoxia, and Kounis syndrome. We advise clinicians to remain vigilant about scombroid poisoning and our case underscores the variability in presentations of scombroid toxicity.

Poster # 6

Incidental Intraoperative Diagnosis of Colon Cancer in a Patient Presenting with Bowel Perforation Secondary to Foreign Body

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Background:
The presentation of gastrointestinal perforations varies depending on the location of perforation, contents released, and capability of the surrounding structures to contain contents. Here, we present an interesting case of a woman who presented with colonic perforation who, intraoperatively, was found to have a foreign body and sigmoid mass near the site of the perforation. The case ultimately led to the diagnosis of colon adenocarcinoma.

Case presentation:
A 60-year-old female with no significant past medical history presented with rectal bleeding of two weeks duration. Two days prior to admission, the patient started to complain of a mild, intermittent abdominal pain in the left lower quadrant (LLQ). On the morning of admission, her pain intensified. She denied any nausea, vomiting, change in bowel habits or bleeding from other sites. In the emergency department, she was tachycardic and hypertensive. Her abdominal examination showed tenderness to palpation in the LLQ without rebound or guarding. A CT scan of her abdomen revealed a perforation in the sigmoid colon with free air and a high-density focus within the lumen suspicious for a foreign body. Initially, the perforation was thought to be secondary to a diverticular rupture, and patient was initially managed with antibiotics. Two days later, patient started having worsening abdominal pain; another CT scan of her abdomen revealed pneumoperitoneum increased from prior imaging, and the same high-density focus. Patient was taken to the operating room (OR), where she underwent an exploratory laparotomy. In the operation, a small perforation of the sigmoid colon was noted and left colon and sigmoid colon were resected and specimens were sent to pathology.

The perforation was adjacent to an ulcerated, hemorrhagic mass, which was found to be a poorly differentiated adenocarcinoma. At the site, a triangular, translucent material suspected to be of plastic was found. Regional lymph nodes were positive and lymphovascular invasion was present. The patient returned to the OR, received repeat abdominal washouts and a transverse colostomy. Oncology plans to follow with the patient for further treatment options.

Conclusions:
Colonic perforation is a rare complication of colon cancer and comprises approximately 3-10% of initial presentations of colon cancer. Whether or not colorectal carcinoma resection occurs as an elective procedure or emergent procedure has been shown to have no difference in 5-year disease-free survival. In assessing by TNM staging, T3 cancers are more frequently associated with emergency colectomies. Although in our case intestinal perforation was most likely due to foreign body, we suggest that adenocarcinoma is considered in any case of bowel perforation.

Poster #7

The Curious Case of a Button: Recurrent Cough in a Young Soldier

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Introduction:

Retention of aspirated foreign bodies can be insidious in presentation. Non-specific, recurrent symptoms including episodes of fever, shortness of breath, and cough can lead to extensive workups, potentially delaying diagnoses. We present a case of symptomatic retention of an aspirated foreign body of unknown age that was successfully removed with rigid bronchoscopy.

Body:

A 22-year-old male presented with recurrent coughing and wheezing for over a year. During this time, he had several episodes of respiratory infections, which improved with antibiotics. Eventually, a chest x-ray was ordered, which demonstrated a circular density along the superior right heart border. A follow-up chest CT demonstrated a metallic foreign body in the right bronchus intermedius. Flexible bronchoscopy revealed near complete obstruction of the right middle (RML) and right lower lobes (RLL) with friable mucosa and no visible foreign object. He then underwent rigid bronchoscopy, and the object was successfully dislodged through an incision made in the adjacent mucosa and removed. The object was identified as a rivet from a pair of jeans. A repeat bronchoscopy was performed for endobronchial debulking of granulation tissue, and two metal stents were placed for stenosis of the RML and RLL bronchi. The stents were successfully removed two weeks afterward. A month after the proce dure, the patient reported significant improvement in his cough, but fevers prompted a repeat bronchoscopy to evaluate for recurrent obstruction. This revealed an early bifurcation of the bronchus intermedius with a stenotic medial accessory segment. A balloon dilation was performed to improve the stenosis, which allowed visualization of the reunited bronchus intermedius and the accessory pathway just proximal to the RML carina.

Discussion:

Here we have a young adult presenting with an aspirated foreign object of unknown age. The patient, nor his parents, recall an inciting event. Similar cases of chronic foreign body aspiration have only been detected by correlation of imaging, history, and eventual bronchoscopy. Here, the patient's object was fortunately radio dense enough to allow visualization on a chest x-ray. The initial bronchoscopy was unsuccessful mainly due to the airway's reaction to the object: growth of mucosa around the rivet, and development of an accessory pathway that bypassed the object allowing aeration of the lower and middle lobes. This type of presentation would normally require surgical intervention, but rigid bronchoscopy was successful in locating and removing the object. Although rare, many aspirated foreign bodies can readily be seen on imaging, and should be considered in a patient with recurrent respiratory infections and nonspecific symptoms like chronic cough, dyspnea, or wheezing.

Poster # 8

A Wink and A Nod: A Case of Dilated Cardiomyopathy from a Pseudoaneurysm of the Mitral-Aortic Intervalvular Fibrosa

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Introduction: Pseudoaneurysm of the Mitral-Aortic Intervalvular Fibrosa (P-MAIVF) after infective endocarditis is a rare and potentially life-threatening complication. We present the case of a patient with a delayed presentation resulting in dilated cardiomyopathy diagnosed by cardiac computed tomography (CCT).

Case Presentation: A 64-year-old male with a history of aortic valve replacement for severe aortic valve regurgitation from infective endocarditis was admitted with a new diagnosis of acute heart failure. During his hospitalization, he developed sustained monomorphic ventricular tachycardia, which required further evaluation. His transthoracic echocardiogram (TTE) revealed a dilated left ventricle (LV) with a severely reduced systolic function with an ejection fraction (EF) of 30%, and a normal functioning prosthetic valve, but an unusual aortic mass. Serial TTEs in the prior five years following his surgery revealed a progressively reduced systolic function despite normal prosthetic valve function. A year prior to admission he underwent a coronary CT angiogram (CCTA), revealing no coronary artery disease with reports of postsurgical inflammatory changes of the prosthetic valve. In the setting of reduced systolic function with sustained ventricular tachycardia with limited accessibility to cardiac magnetic resonance imaging (CMRI), his cardiomyopathy was further evaluated with CCT. Repeat CCT revealed a pulsatile, expanding P-MAIVF with severely dilated LV with severely reduced systolic function, a normal functioning mechanical prosthetic valve with no thrombus or pannus formation, no perivalvular regurgitation or vegetations. Cardiac Positron Emission Tomography (PET) and CMRI did not show evidence of infiltrative cardiomyopathy, myocardial inflammation or prior scarring. The pulsatile and dynamic volume of the pseudoaneurysm contributed a significant regurgitant volume to the LV progressing to a dilated cardiomyopathy based on MRI and CCT findings. He was referred to a surgical center of excellence for surgical correction of his P-MAIVF, where intraoperative findings confirmed CCT findings.

Discussion: P-MAIVF is diagnosed by TTE and transesophageal echocardiography (TEE) with a sensitivity of 43% and 90%, respectively. CCT and CMRI also have been proven to produce complementary findings. Surgical correction is the definitive treatment. If left untreated, P-MAIVF may result in severe complications, including rupture into the pericardium with cardiac tamponade, fistulous tract formation, compression of surrounding structures like the coronary or pulmonary arteries, chest wall erosion, and death.

Conclusions: P-MAIVF can lead to severe complications and may require multiple imaging modalities to diagnose.

Poster #9

A Case of Afebrile Weil's Disease: Protean Manifestations Without the Hallmark of Infection

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Introduction:

Leptospirosis has been described as a "zoonosis of protean manifestations". Although most patients develop a mild febrile illness, on rare occasion multisystem organ involvement leads to Weil's disease, characterized by high fever, significant jaundice, renal failure, and hemorrhage. Here we present an unusual case of Weil's disease in a patient who remained afebrile throughout the course of his 12-day hospitalization. This case acts as a great review of the many manifestations of leptospirosis and as a reminder of the importance of keeping a high index of suspicion, especially in higher prevalence locations such as Hawaii.

Case description:

A 58-year-old healthy farm-dwelling male from Kau, Hawaii presented with a 1 week history of generalized weakness, bilateral lower extremity paresthesias, sore throat, mild cough, chills, diarrhea and dark urine, and was found to have non-oliguric acute renal failure (BUN 167 mg/dL, creatinine 13.5 mg/dL), hyperbilirubinemia (total bilirubin 22.0 mg/dL), leukocytosis (WBC 22,400 /mcL), and hyponatremia (Na 126 mmol/L). Further history revealed that the patient had significant animal contact with pigs, chickens, and cats. Given the constellation of symptoms, an underlying infectious process such as leptospirosis was entertained, and hence he was treated with ceftriaxone and doxycycline on admission. However, the case was felt to be atypical for leptospirosis due to the lack of fever and conjunctival suffusion, and absence of Jarisch-Herxheimer reaction in response to antibiotic initiation. The patient's hospital course was complicated by hallucinations, hemoptysis due to diffuse alv eolar hemorrhage, chest pain due to uremic pericarditis, and hemolytic anemia. On hospital day 11, leptospira IgM antibodies returned positive, and the unifying diagnosis of fulminant leptospirosis was made. The patient subsequently recovered with ongoing improvement in his biochemical markers towards baseline after a 7 day course of antibiotics.

Discussion:

We describe a case of severe leptospirosis (Weil's disease) associated with renal, hepatic, pulmonary, cardiac, hematologic, and central nervous system manifestations, with the patient remaining afebrile throughout his hospitalization. The importance of early antibiotics in fulminant leptospirosis was highlighted - our patient was started on antibiotics on admission and his course was characterized by steady improvement in his acute renal failure and hyperbilirubinemia. In addition, this case shows the importance of taking a thorough history to include environmental and occupational exposures. Leptospirosis can present with a wide spectrum of manifestations, and the diagnosis should be considered, especially in higher prevalence locations such as Hawaii, even in the absence of fever.

Poster #10

What lies within? Massive GI Bleeding from Distal ileal Ulcers associated with Crohn's Disease

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Learning Objectives: Crohn's disease is a subtype of inflammatory bowel disease with a wide variety of presentations and affecting any segment of the gastrointestinal tract. Patients with Crohn's disease presenting with GI bleeding can quickly decompensate, and prompt recognition of possible areas of bleeding is crucial.

Case Presentation: A 40-year-old man with a unconfirmed history of Crohn's disease presented to the Emergency Department with large hematochezia. Over the preceding twenty years, the patient had several episodes of hematochezia, some requiring transfusion. Prior upper and lower endoscopy did not reveal a definitive cause, though Crohn's disease was suspected as a possible diagnosis due to finding of small ileocecal ulcer with mild adjacent cobblestone appearance. He had never been medically treated. Five days preceding this admission, he noticed epigastric pain, which continued until presentation when he also had hematochezia, dizziness, and palpitations.

On intake, the patient was tachycardic but otherwise hemodynamically stable. Hemoglobin was 11.1g/dL. CTA abdomen revealed no active GI bleed. On the first night, his hemoglobin dropped significantly to 7.3g/dL with elevated lactic acid. He underwent colonoscopy and EGD the next morning, which revealed no active bleeding or obvious inflammation consistent with IBD, but blood was found in the ileum. Overnight, he continued to have a decrease in hemoglobin requiring further transfusion with large hematochezia again the following morning. Repeat CTA abdomen showed active extravasation of contrast concerning for arterial bleed in the terminal ileum. Interventional angiography was performed and a branch of the ileocolic artery was embolized. Following further blood transfusion, he remained stable. Capsule endoscopy was unrevealing and he was discharged on the fifth hospital day.

Unfortunately, the patient had another episode of hematochezia the day after discharge and returned to the ED. CTA abdomen was unrevealing. The following morning, the patient became hypotensive with obvious pallor and repeat CTA abdomen showed active hemorrhage, again, at the level of the ileum. He underwent exploratory laparotomy and intra-operative enteroscopy, revealing scarred mesentery, stricture, and four ulcers in the distal ileum including one with recent bleeding, which were resected. Post-operative course was uncomplicated with no further bleeding.

Pathology of the ulcers revealed transmural inflammation consistent with Crohn's disease and outpatient initiation of DMARD therapy was planned following surgical recovery.

Discussion: This case illustrates the difficulty of diagnosing Crohn's disease. While atypical, massive bleeding with hemodynamic compromise may occur. Owing to the wide variety of presentations, it is important to maintain Crohn's disease in the differential for GI bleeding even if endoscopy is initially unrevealing.

Poster #11

Loneliness and Depressive Symptoms and 8-Year Incident Dementia: The Kuakini Honolulu-Asia Aging Study

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Introduction: Recent studies show that depression and loneliness are each associated with cognitive impairment. There are no studies on the synergistic effect of both depression and loneliness on incident dementia.

Methods: The Kuakini Honolulu-Asia Aging Study (HAAS) is a longitudinal cohort study of dementia in Japanese-American men in Hawaii. At the 4th exam (1991-93), 3,741 men ages 71-93 years participated. Depressive symptoms were measured by the 11-item Centers for Epidemiologic Studies Depression (CES-D) scale, and loneliness was defined by a single question. We did separate analyses for depressive symptoms, loneliness, and a 4-level composite variable (neither, depression only, loneliness only, or both). Subjects were followed for 8 years for incident all-cause dementia (DEM), Alzheimer's disease (AD) and vascular dementia (VaD), based on standard criteria. After excluding baseline prevalent dementia, those without valid CES-D score or those in nursing homes, our analytic sample included 2,651 men.

Results: Age-adjusted rates per 1,000 person-years follow-up increased across 4 groups of neither, depression only, loneliness only, and both, for incident DEM (9.23, 16.23, 18.07, 25.31, $p<0.0001$) and AD (5.40, 9.93, 13.18, 13.89, $p=0.003$). Using Cox regression, adjusting for age, education, APOE4, prevalent stroke, baseline cognition and marital status, we found increasing relative risks for incident DEM across the 4 groups using presence of neither symptom as reference (depression only RR=1.67, 95%CI=0.94-2.94, $p=0.078$; loneliness only RR=2.07, 95%CI=1.30-3.30, $p=0.002$; and both RR=2.87, 95%CI=1.80-4.57, $p<0.001$; p for trend <0.001). Similar increases in incident AD were seen across the 4 groups (depression only RR=1.80, 95%CI=0.87-3.73, $p=0.111$; loneliness only RR=2.51, 95%CI=1.43-4.41, $p=0.001$; and both RR=2.51, 95%CI=1.33-4.76, $p=0.005$; p for trend <0.001). There were no significant associations with VaD.

Conclusions: Loneliness and depressive symptoms are significant independent and additive predictors of incident DEM and AD, but not VaD, in older Japanese-American men. It is possible that these symptoms may be early manifestations of dementia. Addressing these factors early may help prevent dementia or its progression.

Funding Sources: National Institute on Aging (NIA), National Heart, Blood and Lung Institute (NHBLI), National Institute of General Medical Sciences (NIGMS), Kuakini Medical Center, Veterans Administration (VA).

Poster # 12

Impaired Standing Balance Predicts 29-Year Mortality in Older Japanese-American Men: The Kuakini Honolulu Heart Program

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Introduction:
Physical performance measures such as gait speed, timed chair stand, handgrip strength and balance have been studied as predictors of mortality. Studies of the association between balance and mortality have had mixed results. We studied whether balance was a predictor of mortality in a population of older Japanese-American men.

Methods:
The Kuakini Honolulu Heart Program is a prospective population-based study of cardiovascular diseases in Japanese-American men that started in 1965. At exam 4 (1991-93), physical performance was measured in 3,741 men ages 71-93 years. Balance measures included 10-second side-by-side, semi-tandem and tandem stands. Subjects were divided into three groups of standing balance: normal (able to keep tandem position for 10 seconds, 74.76%), slightly impaired (able to keep tandem position for 1-9 seconds, 17.55%) and very impaired balance group (unable to stand in tandem position, 7.69%). Participants were followed for all-cause mortality for up to 29 years, through December 2019. After excluding men living in care homes or nursing homes, our analytic sample included 3,613 community-dwelling subjects.

Results:
Age-adjusted mortality rates per 1,000 person-years follow-up increased significantly by standing balance groups, from 92.58 in the normal, 104.21 in the slightly impaired, to 162.67 in the very impaired balance groups, $p<0.0001$. Cox regression found an increased risk of mortality in the slightly impaired group (RR=1.37, 95%CI=1.25-1.49, $p<0.0001$) and very impaired group (RR=2.99, 95%CI=2.99, $p<0.0001$) respectively, using normal balance group as reference, p for trend <0.0001. This association remained significant only in the very impaired group (RR=1.58, 95%CI=1.30-1.91, $p<0.0001$) after adjustment for age, cardiovascular risk factors, and prevalent CHD, stroke, cancer, Parkinson's disease, dementia or cognitive impairment.

Conclusions:
In older Japanese-American men, standing balance was an independent predictor of all-cause mortality over almost 3 decades of follow-up. Standing balance is a simple test that captures global functioning and frailty, and can be done in a variety of clinical settings. It may be useful for prognostication and decision-making, as well as for identifying a target population for interventions.

Funding Sources: National Institute on Aging (NIA), National Heart, Blood and Lung Institute (NHBLI), National Institute of General Medical Sciences (NIGMS), Kuakini Medical Center.

Poster # 13

Acute Massive Splanchnic Vein Thrombosis Due to Hormonal Therapy

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Introduction:

Splanchnic vein thrombosis is a rare cause of venous thromboembolism. There are multiple etiologies including malignancy, infection, autoimmune, hereditary disorders, and hormonal therapy. Complications include sequelae related to portal hypertension, bleeding, and bowel ischemia.

Case Presentation:

A 50-year-old male with a past medical history significant for hypertension, hyperlipidemia, and "low testosterone," presented with sudden onset of abdominal pain, progressively worsening over the ensuing three days. The pain was associated with bloating, worsened with eating and taking deep breaths, and refractory to over the counter analgesic medication. Medications were significant for testosterone and anastrozole every two weeks. On physical examination, he was noted to have significant tenderness to the epigastric and right upper quadrant, but no rebound tenderness or guarding. Laboratory evaluation was notable for mildly elevated transaminases. Computed tomography imaging of the abdomen and pelvis with intravenous contrast revealed acute thrombosis of the portal vein, proximal superior mesenteric vein, and proximal splenic vein. General surgery was consulted, however, the patient was deemed not a surgical candidate. An extensive hypercoagulable work-up was pursued for hereditary, inflammatory, and malignant causes, all of which were negative. The patient was thought to have the extensive splanchnic vessel thrombosis as a result of the testosterone and anastrozole use. He was treated initially with enoxaparin and subsequently transitioned to oral anticoagulation with warfarin. He continued to have significant pain slowly improving over the ensuing several days requiring opioid therapy for pain control. He was advised to discontinue any further hormonal therapy, and was discharged to outpatient follow up.

Discussion:

In this report, we highlight a case of extensive splanchnic vein thrombosis as a result of hormonal therapy, presenting with acute onset, progressive abdominal pain. The mainstay of treatment includes anticoagulation as well as pain control, and management of any secondary sequelae including bowel infarct or bleeding. Clinicians should remain vigilant about splanchnic vein thrombosis as a rare cause of abdominal pain, especially for those on hormonal therapy or with other hypercoagulable risk factors.

Poster # 14

Anomalies in Sweating Due to Pulmonary Adenocarcinoma

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Introduction:

Lung cancer is a devastating disease with multiple paraneoplastic and other associated syndromes. Unilateral hyperhidrosis has been described as a rare occurrence associated with intrathoracic malignancies, with less than 20 cases reported in the literature. Multiple etiologies have been postulated including irritation of nerves, such as the sympathetic ganglion, as well as biofeedback to the hypothalamus. Regardless, unilateral hyperhidrosis has been associated with a poor prognosis in those with intrathoracic malignancy.

Case Presentation:

We present a 57-year-old female with a 35 pack-year smoking history who was referred to pulmonology for an incidental lung mass seen on a CT abdomen and pelvis performed for menorrhagia. A dedicated CT chest with contrast revealed a 3.2 x 2.9 x 2.5 cm spiculated mass in the right lower lobe, with an enlarged right hilar lymph node, and a 1.1 x 1.5 x 0.8 cm nodule in the left upper lobe suspicious for either metastatic or synchronous disease. PET scan showed the RLL mass to be highly avid with an SUV max of 9.7 with additional FDG uptake in the right hilar and paratracheal lymph nodes as well as the LUL nodule. Navigational bronchoscopy with endobronchial ultrasound revealed metastatic adenocarcinoma in the RLL mass as well as right hilar node. Given concern for a synchronous process in the LUL, the patient underwent a CT guided biopsy followed by cervical mediastinoscopy and VATS with LUL wedge resection to rule out N2 disease. Pathology of the LUL nodule showed adenocarcinoma and th us proved metastatic disease. The patient recovered well, however, she complained of a difference in sweating between the two sides of her body. She noted that the right side of her body sweat more profusely compared to the left. This finding could not be explained by the location of her tumors, nor could it be explained by surgical intervention. There was no evidence of Horner syndrome and she was without any other neurologic finding. The hyperhidrosis of the patient's right side of the body is thought to be unilateral hyperhidrosis associated with thoracic cancers as described in the literature.

Discussion:

In this report, we outline a case of unilateral hyperhidrosis as a result of a pulmonary adenocarcinoma. Multiple reports in the past have shown poor prognosis in patients with this finding. A complaint of unilateral hyperhidrosis should warrant close monitoring for spread in patients with lung cancer.

Poster # 15

A Case of Colorectal Cancer found During Pregnancy

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Learning Objectives:
1. Highlight the epidemiology and clinical manifestations of young-onset colorectal cancer
2. Review management and workup of colorectal cancer in a pregnant patient

Case description: A 31-year-old woman who was 14 weeks pregnant presented with a six-month history of hematochezia, constipation, tenesmus, and rectal pain, associated with a 20lb weight loss. She did not have melena, nausea, vomiting, or abdominal pain. She was previously seen in Texas and underwent CT abdomen that revealed colon suspicious for infectious or inflammatory process. This was treated with ciprofloxacin and metronidazole with no improvement. EGD and colonoscopy was deferred at the time due to her pregnancy.

Past medical history notable for recent miscarriage seven months prior. Physical exam revealed moderate distress and severe pain on rectal exam, with a narrow, firm rectum and no blood on the glove. She had no abdominal tenderness, mass, rigidity, or guarding. Laboratory testing was unremarkable and obstetric ultrasound revealed single live intrauterine dated at 14 weeks gestation.

She underwent colonoscopy which revealed a 9cm fungating, circumferential rectal mass. Biopsies revealed poorly differentiated adenocarcinoma with signet ring cell component, consistent with colorectal primary. Staging MRI rectum revealed spread to perirectal fat with several enlarged lymph nodes in the mid-rectum, suspicious for nodal metastasis. CT abdomen and chest with contrast revealed no intrathoracic or abdominal organ spread but partial colon obstruction secondary to rectal mass. A multidisciplinary meeting was held between Oncology, OB/GYN, General Surgery, Internal Medicine, patient, and her husband. She stated she wished to proceed with pregnancy and began chemotherapy with FOLFIRINOX, aware of the potential risk to her fetus. She tolerated the first cycle well without complications and with improved rectal pain. She was discharged to outpatient follow up for further oncologic and obstetric care.

Discussion: The incidence of colorectal cancer in the US is steadily increasing in age groups younger than 50 years, even as incidence and mortality rates continue to drop in individuals older than 50. The rising prevalence of risk factors such as diabetes mellitus and obesity among young Americans is likely partially responsible, but does not fully explain this increase given they are also more prevalent in older populations. Young-onset colorectal cancer is more likely to be detected at advanced stage disease, with a higher percentage of cases exhibiting poor differentiation and/or signet ring cells on histology. This case features a typical presentation of young-onset colorectal cancer in a pregnant patient, with associated characteristic diagnostic findings and initial management. Early recognition of classical symptoms and appropriate evaluation for colorectal cancer in younger patients may help to improve survival and reduce the disproportionate number of cases with poor clinical outcomes.

Poster # 16

Subclinical Hypothyroidism Is Associated with Hypertension in Women: A Systemic Review and Meta-Analysis

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Background:
Subclinical hypothyroidism (SCH) is a common condition affecting approximately 4-15% of the United States population. It is biochemically defined as a normal free thyroxine (FT4) concentration in the presence of elevated thyroid-stimulating hormone (TSH) that may occur with or without mild symptoms of hypothyroidism. Previous studies have suggested an increased risk of cardiovascular diseases such as heart failure, coronary artery disease, and hyperlipidemia in SCH patients. However, an association between SCH and hypertension (HTN) remains unclear. Interestingly, there seems to be possible gender influence on the association between SCH and HTN, as some studies have shown a positive relationship between SCH and HTN in women while some have shown one only in men. In this study, via pooled meta-analysis, we investigate the association between SCH and the incidence of HTN in the female population.

Methods:
A comprehensive literature search in the MEDLINE and EMBASE databases was performed through November 2020. Included studies consisted of cross-sectional studies, cohort studies, and case-control studies that reported the incidence of HTN in female patients with SCH. A random-effects model was used to evaluate the pooled odds ratio (OR) and the 95% confidence interval (CI). A subgroup analysis was performed to investigate age-dependence in the association between female SCH patients and HTN.

Results:
Ten studies with a total of 22,270 subjects (1,986 subjects with SCH) were included in the meta-analysis. SCH was associated with an increased risk of developing HTN in female (OR = 1.322, 95% CI = 1.071-1.630, p = 0.020, I2 = 74%). In the subgroup with mean age < 60, SCH was associated with increased risk of HTN (OR = 1.548, 95% CI = 1.192-2.009), while there was no significant association in patients with mean age ≥ 60 (OR = 1.0012, 95% CI = 0.838-1.195). Funnel plot and Egger's test showed absence of publication bias or small studies effect. Sensitivity analysis, which was conducted by excluding individual studies, suggested robust results.

Conclusions:
In conclusion, we demonstrate gender-specific, age-dependent association of SCH and HTN in this overall pooled meta-analysis. Women with SCH had up to 32% increased risk of developing HTN compared to euthyroid women. The subgroup analysis showed that the association was significant only in the group of patients aged less than 60. More studies will be needed to elucidate the association between SCH and HTN in different gender and age groups and to investigate its underlying pathophysiology.

Poster # 17

Percutaneous Transhepatic Choledocoscopy and Stone Extraction in a Patient with Recurrent Cholangitis from Retained Intrahepatic Biliary Stones

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Introduction:

ERCP is the gold standard to treat cholelithiasis, though there are situations where ERCP is unsuccessful and alternative treatments are necessary. Percutaneous transhepatic choledoscopy (PTCS) is a safe, minimally invasive option performed by interventional radiology (IR) that can avoid more invasive treatments like hepatic resection.

Case Presentation:

A 45-year-old male sustained a traumatic liver laceration and bile duct injury during military deployment in 2005. In 2011 he presented with right upper quadrant pain and was found to have cholangitis and gallstone pancreatitis due to an isolated segment of biliary ectasia and retained biliary stones in segment 7. He underwent open cholecystectomy with bile duct exploration and t-tube placement, but experienced recurring choledocholithiasis and retained intrahepatic stones in 2013, 2017 and 2019. ERCP sphincterotomy was performed to treat the choledocholithiasis, but was unable to localize the isolated segment of retained stones (Figure A). The patient ultimately underwent percutaneous transhepatic cholangiography with biliary drain placement by IR. MRI revealed a persistent segment of isolated biliary ectasia and retained biliary stones complicated by pancreatitis. This prompted a referral to our tertiary care center for evaluation. Cholangiogram revealed the isolated segment and a variant right hepatic duct arising from the left hepatic duct. The drain was withdrawn and after a repeat ERCP was performed without success, a decision was made to perform PTCS. A 9.5-French LithoVue Single-use Digital Flexible ureteroscope (Boston Scientific, Marlborough, MA) was advanced into the liver via the established percutaneous access tract (Figure B). The abnormal segment was identified and the retained stones were either extracted with a 2.4 French Zero-tip Nitinol Retrieval basket (Boston Scientific, Marlborough, MA) (Figure C) or fragmented and flushed into the duodenum. When all stones were removed, an internal/external biliary drain was left in place and the patient has been without further complications since.

Discussion:

This is the first reported case of PTCS with basket extraction to treat recurrent cholangitis from chronic biliary ectasia and retained biliary stones from a traumatic liver laceration. PTCS is well recognized as a safe and effective treatment for obstructing biliary stones not amenable to ERCP or hepatic resection. It can be safely performed through existing percutaneous access with small-caliber endoscopes with a high success rate.

Poster # 18

Invasive Klebsiella Pneumoniae Liver Abscess Syndrome Presenting as Right Calf Cellulitis with Abscess

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A 36-year-old Filipino man with past medical history of psoriasis and type 2 diabetes mellitus presented with acute right calf pain and swelling. Pain was non-radiating, worsened on palpation, and relieved with rest. He denied having fever or recent exposure to freshwater, seawater, recent travel, or injury. He is a former-smoker and alcohol drinker, never uses illicit drugs. Physical exam was pertinent for right calf tenderness with small fluctuation, erythematous area at calf spreading up to knee. Needle aspiration was done. Purulent fluid was obtained and sent for gram stain and culture. CT lower extremities showed a 4cm-sized muscular abscess extended to posterior tibialis muscle. He was admitted for sepsis with cellulitis and calf abscess. Vancomycin and ceftriaxone were started as empirical antibiotics. Gram stain showed gram-negative rods, later identified as Klebsiella pneumoniae which is uncommonly reported to cause cellulitis and muscular abscess. Abscess and blood cultures grew Klebsiella pneumoniae. Consulted infectious disease specialist, who broadened ceftriaxone to meropenam and recommended labs and imaging for other sources of infection. LFTs were remarkable for elevated alkaline phosphatase, urinalysis was positive for leukocyte esterase and pyuria. CT abdomen/pelvis with contrast showed a 7-cm multi-loculated liver abscess and multiple prostatic abscesses. Surgery, Interventional Radiology, and Urology specialists were consulted for interventions. Catheter-guided liver abscess aspiration and drainage was done. Patient underwent transurethral resection of prostate with unroofing. Both abscess cultures grew Klebsiella pneumonia. Antibiotic sensitivities of all grown specimen were sensitive to ceftriaxone and resistant only to ampicillin. Meropenam was discontinued and patient was placed on ceftriaxone and metronidazole. Post-operatively, he developed sudden dyspnea. CXR and CT Chest showed right loculated pleural effusion. Diagnostic thoracocentesis was done and drained 600 ml of yellow cloudy pleural fluid. Pleural fluid study was correlated with parapneumonic effusion and culture did not grow any organisms. Patient was diagnosed as Sepsis secondary to "Invasive Klebsiella pneumoniae liver abscess syndrome" with right parapneumonic effusion. His symptoms improved with antibiotics and abscess drainage. Repeat CT showed decreased abscess size and muscular abscess was completely drained. Dyspnea improved after thoracocentesis. After drain removals, he was discharged from the hospital and continued on ceftriaxone and metronidazole as outpatient medications in a total of 6 weeks.

This case illustrates how a patient with multiple organs disseminated infectious disease could present with local skin infection. Most of the other infected organs in our patient were found by early recognition that it is rare for Klebsiella pneumoniae to grow on skin abscess. Knowing that it does not typically cause local cellulitis or skin abscess, disseminated infection from other infection sources should be suspected and evaluated.

Poster # 19

Cardiac Manifestations of Systemic Lupus Erythematosus

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Introduction:
SLE, like other autoimmune disorders, can have significant cardiac manifestations. SLE is a risk factor for earlier cardiovascular disease (CVD). SLE can also be complicated by pericarditis, conduction defects, valvular defects, and pericardial effusions. We present a case analysis of two women recently diagnosed with SLE that had remarkable cardiac manifestations.

Case Series:
A 45-year old female was diagnosed with SLE after having chronic cutaneous lupus erythematosus, intermittent joint swelling, lymphadenopathy, and unexplained fevers over the last year. At her current presentation, she was hospitalized after having recent NSTEMI with ongoing chest pain as an outpatient. She received a CT angiography with findings of severe luminal stenosis of the left main cardiac artery along with 'string sign' of the LAD. Plans were made to have invasive coronary angiography with revascularization. Due to significantly elevated inflammatory markers and lack of traditional cardiac risk factors (non-diabetic, no hyperlipidemia, etc.), a PET CT was ordered to evaluate for possible large vessel vasculitis. The scan was negative for thoracic vasculitic appearing inflammation, but demonstrated evidence of pneumonitis, a phenomenon common in SLE. She began hydroxychloroquine and proceeded to CABG. To date, she remains chest pain free, is on medication management post-C ABG, and her inflammatory markers are improving.

A 23-year old female with a history of biopsy proven Class IV/V lupus nephritis with refractory nephrotic syndrome diagnosed a year prior, presented to the hospital with a non-productive cough and echocardiogram findings of severely reduced ejection fraction of 30-35%. Cardiac MRI confirmed suspicions of pericardial effusion and dilated cardiomyopathy. While undergoing diuresis, medical workup found that she developed a pericardial effusion from chronic inflammatory myocarditis due to refractory lupus nephritis. She received a course of IV immunoglobulins and her SLE medications were adjusted. One year later, she returned with evidence of pericarditis and worsening edema. She started dialysis, with improvement in her fluid status. She has since had multiple episodes of pericarditis, and remains on colchicine. Her SLE medications have been regularly evaluated with her rheumatologist and nephrologist, with difficulty in controlling her lupus flares. She continues to be high risk due to difficulty in managing her flares and remains on the kidney transplant list.

Conclusions:
A study published by Kreps et al. found that cardiac complications of SLE occur in up to 50% of cases. Morbidity and mortality is high in this population. Disease activity is thought to be directly correlated to predisposing these patients to cardiac manifestations, as the chronic inflammation likely takes a toll on the cardiovascular system. Research is currently targeting inflammatory pathways in the hopes of reducing the number of cardiac cases in this population.

Poster # 20

Moments that Matter - Diabetes Management and Provider Practice Patterns Following Hospital Discharge

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Introduction: Effective patient self-management of the chronic disease of diabetes fluctuates over time. Evidence shows there are times in patients' lives in which internal motivation to engage in effective disease self-management is higher. These "moments that matter" include hospital discharge, surgery, new diagnosis of diabetes or diabetic comorbidity, and life stage change such as retirement. This interprofessional quality improvement project aims to better understand internal patterns of post-hospital discharge management of diabetic patients with HbA1c >8% to potentially intervene more effectively in this higher-engagement time period in conjunction with our Panel Support Services (PSS) diabetes management team of nurses and pharmacists

Methods: We completed a chart review of patients discharged from Moanalua Medical Center in 2019 with uncontrolled diabetes mellitus type 2 defined as HbA1c >8% checked within 3 months of hospital admission date. Patients were excluded who were not admitted directly to Internal Medicine or Intensive Care Unit services, who did not attend hospital follow up in the outpatient setting (typically scheduled 1-2 weeks post-discharge), and who did not complete subsequent laboratory testing of HbA1c in the post-hospital setting. Patients were further divided into four HUB clinic sites and 10 patients were selected at random from each hub site to review in depth for this analysis.

Results: Forty patients were included in an in-depth chart-review. The average age of patients studied was 58.5 years and 47.5% of patients were female. HbA1c was improved compared to most recent peri-hospital HbA1c value in 87.5% of patients at the 1st check post-hospital discharge, with 40% persistent improvement at the 2nd HbA1c check and 17.5% at the most recent HbA1c check. The average time to first post-hospital HbA1c check was 17.5 weeks and there were on average 21 contacts with patients between first and second HbA1c checks. Hospital follow up was completed by the patient's PCP in 82.5% of cases. Diabetes was discussed with 77.5% of patients and medication changes were made in 25% of patients. Interprofessional engagement with previous PSS contact was documented in 92.5% of patients. Referrals back to PSS were placed in 30% of cases and 7.5% of patients were referred to outpatient dieticians.

Conclusion: The post-hospital discharge period is a moment that matters in the care of poorly controlled diabetic patients, evidenced by improvement in most patients' HbA1c without documented intervention. Our data suggest that the lack of discussion about diabetes and the lack of adjustment of diabetes therapies in the setting of poor control may contribute to the lack of sustained improvement demonstrated. Phase 2 of our project will include development of an intervention to assure discussion of diabetes diagnosis and disease burden, appropriate treatment plan adjustment, and engagement of interprofessional services such as dieticians or PSS.

Poster # 21

Unexpected Diabetes Outcomes in Native Hawaiian Population Receiving Multidisciplinary Team Care

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Introduction: Hawai'i boasts one of the healthiest populations in the United States. However, Native Hawaiian patients have been shown to have a higher prevalence of diabetes and experience worse diabetes outcomes. This interprofessional quality improvement project aims to better understand how Native Hawaiian patients engage with multidisciplinary health plan resources compared to their non-Hawaiian counterparts. We hypothesized that Native Hawaiian patients in our healthcare system would have reduced levels of engagement and worse outcomes, consistent with prior reports.

Methods: The How Are We Doing? HEDIS outcome tracker for a primary care clinic faculty preceptor was accessed for patients with diabetes mellitus type 2 and HbA1c levels >8 %. Fourteen Native Hawaiian patients were identified and 28 randomly chosen non-Hawaiian patients were selected as a control group for this chart review. Resource utilization was charted in a binary fashion (y/n) and HbA1c improvement was tracked as change between the last two HbA1c measured (typically checked at 6-month or 1-year intervals). Statistical analysis was done with a two sample T test with significance set at 95%.

Results: Forty-two patients were included in this study. Between Native Hawaiian and non-Hawaiian patients, the mean age (54.6 vs 53, p=0.93) and mean HbA1c (10.6 vs 10.3, p=0.61) were similar, although the average BMI of Native Hawaiians was significantly greater (36.6 vs 30.5, p=0.03). Appointment no-show rates were slightly lower (11.5 vs 15% p=0.30) but the time between HbA1c checks was not statistically different (38.4 vs 42.3 weeks p=0.82). In terms of health plan resource utilization, Native Hawaiians were more likely to receive the list of health plan resources with contact information in their after-visit summary (71.4 vs 37.9% p=0.03), were more likely to engage with weight management services (35.7 vs 3.5% p=0.06), and were more likely to have active KP.org access accounts (85.7 vs 62.1% p=0.07). However, there was not a statistically significant difference in engagement with dieticians (42.9 vs 27.6% p=0.16), lifestyle coaches (14.3 vs 13.8% p=1.0), panel support services (35.7 v s 10.3% p=0.12), or attendance of diabetes classes (28.6 vs 24.1% p=0.81). Finally, there was no statistically significant difference in improvement in HbA1c between groups, with a trend towards improved HbA1c control among Native Hawaiians (35.7 vs 27.2% p=0.17).

Conclusion: Contrary to our hypothesis, Native Hawaiian patients in our study group did not have worse outcomes. While our sample size was small, we believe that this lack of difference reflects increased engagement and resource utilization, given that Native Hawaiians were more likely to have active Kp.org access accounts and to receive health plan resources in the after-visit summary, as well as to engage with weight management services. Strategies focused on increased engagement and resource uptake will likely improve the health of these patients.

Poster # 22

Culturally Considered Care and the Underestimation of Disease Burden Among Native Hawaiian Diabetes Mellitus Patients

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Background: Diabetes mellitus disproportionately affects Native Hawaiian populations. The underestimation of disease burden prevents accurate characterization of the specific challenges Native Hawaiians face in the management of chronic disease. Standards of medical care and medication management remain similar among Native Hawaiian, Asian, and Caucasian diabetic patients despite higher rates of multi-system complications. In combating these heath disparities, it was found that culturally adapted, locally based educational interventions, and culturally managed educational dietary programs provided promising results in the reduction of BMI and HbA1c measurements than medication therapy alone.

Methods: An evaluation of literature on the complications of diabetes mellitus in Native Hawaiians, treatments, and management was performed by systematically searching peer reviewed articles on PubMed. Dates between 2000 – 2020 were selected. Keywords included: Native Hawaiian diabetes AND: mellitus, A1c, management.

Results: Search results identified 939 articles using the search criteria described above. The true prevalence of diabetes mellitus in Native Hawaiian populations is often unknown and under-reported due to the grouping with other Pacific Islanders. Diagnoses may be underrepresented and are often complicated by comorbidities. Increases of blood glucose and higher BMI are both directly related to the percent of blood quantum of Native Hawaiians. These risk factors are also associated with higher prevalence of diabetes mellitus. Culturally adjusted programs that focused on community and social networks were successful as educational interventions in managing diabetes. Ultimately, the adaptation of current evidence-based education programs with cultural consideration and social integration may reduce the disease burden in Native Hawaiian diabetes mellitus patients.

Conclusion: Insufficient categorization of data that specifically separates Native Hawaiian and Pacific Islander populations, and the underestimation of disease burden in this specific population prove to be challenges in the management and understanding of diabetes mellitus in Native Hawaiians. Additional research into the application and implementation of cultural adapted, socially oriented, evidence-based practice in the intervention of diabetes is urgently needed to combat the disproportionately high numbers of diabetes in Native Hawaiians. Although current management guidelines do not differ for Native Hawaiian populations, treatments geared toward prevention of chronic heart disease and chronic renal disease may help to address the high comorbidities and complications of these diseases in Native populations; while reducing unknown and underestimated disease burden in this particular population. Whereas culturally designed programs modified from evidence-based curriculum may prove to be a more cost effective and efficacious approach to the management of diabetes mellitus in Native Hawaiians.

Poster # 23

It is the Liver; Unexplained Presentation of Acute Respiratory Failure

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Hepatopulmonary syndrome (HPS) is a common cause of respiratory failure in patients with chronic liver disease. It is characterized by hypoxemia caused by intrapulmonary shunting due to intrapulmonary vascular dilations, which is attributed to chronic liver disease, portal hypertension or congenital portosystemic shunts.

HPS is typically detected in patients with chronic liver disease. However, patients may not always have a known history of liver disease. It is diagnosed via imaging studies, such as contrast enhanced transthoracic echocardiography or macroaggregated albumin scan. Here, we present a case of HPS in a patient without known liver disease and subsequently unremarkable hepatic workup except for hepatic steatosis.

A 57-year-old male with a medical history of kidney stones presented with weakness and dyspnea. The patient had a ureteral stent placed two months prior to presentation, and after removal two weeks prior to admission, he had weakness and fever. One day prior to admission, he started having cough and dyspnea. In the ED, patient was tachypneic and hypoxic. Otherwise, his physical examination was unremarkable. His serum glucose level was 1670. The patient was admitted and started on insulin drip to manage his hyperosmolar hyperglycemic state. He was placed on a non-rebreather mask but his oxygen saturation did not improve and therefore was intubated.

His CXR was clear and CT chest angiography revealed old granulomatous disease, but no other findings. The patient's serum glucose improved but he remained on mechanical ventilation. Liver enzymes were slightly elevated with no evidence of viral hepatitis, hemochromatosis, alpha-1 antitrypsin deficiency, or Wilson disease. Covid-19 testing and respiratory viral panel were negative. A contrast enhanced transthoracic echocardiogram was done and was negative for intra-cardiac or intra-pulmonary shunting. A macroaggregated albumin scan was done and showed an intra-pulmonary shunt. Liver US showed severe fatty liver changes with no evidence of cirrhosis or portal hypertension. Pulmonary team was consulted and recommended referral for liver transplantation. The patient's condition improved over a few days, and he was weaned off mechanical ventilation and discharged in stable condition to follow-up with the pulmonary clinic and liver center.

While HPS is well described among patients with chronic liver disease and portal hypertension, it is typically not considered high on the differential for patients presenting with dyspnea. Our patient did not have a history of liver disease or portal hypertension, and his subsequent work up following the detection of intra-pulmonary shunting, was only remarkable for severe liver steatosis, with no evidence of cirrhosis or portal hypertension. This unusual presentation made the diagnosis very challenging and a high clinical suspicion was necessary. We therefore encourage clinicians to still consider HPS in patients with unexplained hypoxemia and evidence of liver injury, even in the absence of cirrhosis or portal hypertension.

Poster # 24

A Case of Plummer-Vinson Syndrome in a Young Pacific-Islander Female with Dysphagia

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Plummer-Vinson syndrome (PVS) is a rare condition characterized by the triad of iron-deficiency anemia (IDA), dysphagia and upper esophageal webs. Most commonly seen in middle-aged Caucasian women in temperate northern countries, this syndrome has become increasingly rare due to the decreased prevalence of iron deficiency anemia. We present an unusual case of a 29-year-old Pacific-Islander woman with dysphagia, who was found to have IDA, and esophageal web on upper endoscopy, consistent with diagnosis of PVS.

A 29-year-old Pacific-Islander woman with no past medical history was referred to the gastroenterology (GI) clinic for evaluation of dysphagia. Ten months prior to presentation she had dysphagia with solid foods but not liquids. The patient also lost 80 pounds in three years. She denied other symptoms. Her physical examination was unremarkable. Blood tests showed microcytic anemia, and subsequent work up showed IDA. Barium esophagram did not show any mass, stricture or obstruction. Upper endoscopy was done and showed a web in the proximal esophagus, which was about 6 mm in diameter and dilated to 7 mm; otherwise she had a normal middle and distal esophagus. A biopsy of the web was normal without evidence of malignancy or eosinophilic esophagitis. However, stomach biopsies showed chronic H. Pylori gastritis, and she was started on triple therapy. After esophageal web dilation, the patient reported significant improvement in dysphagia, and she gained 5 pounds in one month. The patient followed-up with the GI clinic for subsequent endoscopy and dilation.

Plummer-Vinson syndrome presents as spasms of the upper esophagus and dysphagia in the setting of iron deficiency anemia. Etiology is unclear, although a genetic predisposition has been postulated. IDA is thought to play a crucial rule after studies showed improvement in dysphagia after iron repletion. The pathogenesis is thought to be due to iron deficiency precipitating an iron-dependent enzyme dysfunction and oxidative stress with subsequent DNA damage to the esophageal mucosal epithelium, resulting in mucosal atrophy and the subsequent development of esophageal webs.

Diagnosis is based on evidence of IDA and visualization of an esophageal web on imaging or endoscopy. Barium esophagram is the most sensitive for the detection of esophageal webs, as webs can be missed on endoscopy due to the proximity to the upper esophageal sphincter. The longterm sequelae of this syndrome is the risk of esophageal and pharyngeal squamous cell carcinoma with rates between 4-16%. Monitoring for esophageal squamous cell carcinoma is recommended by some experts, although it has not been shown to improve outcomes. Treatment is with iron repletion, which in most cases can resolve dysphagia without the need for intervention. In cases of severe obstruction, mechanical dilation can be done via endoscopy, and some patients might require frequent dilations.

Poster # 25

Hepatitis E Virus Superinfection: An Underrecognized Trigger of Acute Hepatitis B Virus Flare

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Hepatitis E virus (HEV) infection is a significant cause of acute hepatitis in endemic areas, such as Asia, Africa, and Mexico. In these regions, it can account for more than half of sporadic acute cases of hepatitis. HEV prevalence in the United States (US) has been estimated between 6 - 20%.
Chronic hepatitis B virus (HBV) infection affects about 1 per 1.4 million people in North America. Although well-documented in Asia, HBV flare secondary to HEV superinfection is not well reported in the US. Here, we present a case of chronic undiagnosed HBV with flare secondary to HEV superinfection.

A 34-year-old man with a past medical history of traumatic brain injury presented with five days history of abdominal pain, vomiting, diarrhea, jaundice and dark urine. He denied any history of fever, malaise, or travel. He formerly drank alcohol and smoked cigarettes and denied illicit drug use. Physical exam showed icteric sclera, yellowish skin, and right upper quadrant tenderness. Liver function test showed an AST 681 IU/L, ALT 1383 IU/L, ALP 145 IU/L, total bilirubin of 14.2 mg/dl and direct bilirubin of 9.3 mg/dl. CT scan and ultrasound of the abdomen revealed mild hepatomegaly but otherwise unremarkable. Further evaluation revealed Hepatitis B serologies consistent with an acute reactivation of a chronic HBV infection. Quantitative HBV DNA level was > 91 million IU/ml. Testing for HCV, HAV, HDV, HSV, HTLV, ceruloplasmin, ANA, and RPR were negative. Liver biopsy revealed marked reactive changes consistent with an acute HBV infection. Entecavir therapy was initiated. After six weeks, there was improvement in transaminase levels and HBV-DNA, but total bilirubin remained at 22.1 mg/dl. Due to the lack of improvement of total bilirubin, testing for HEV was obtained and HEV Ab IgM was positive. Ribavirin was initiated and maintained for 8 weeks. After eight weeks the bilirubin dropped down to 2.8 mg/dl.

The natural course of chronic HBV infection involves fluctuations in transaminase levels and HBV viral load, but additional insults can result in disease flares. For this reason, testing for other etiologies are obtained routinely, but HEV is often not considered. In the US there are no FDA approved commercial tests for detection of HEV, thus diagnosis of HEV infection if often overlooked or delayed.

Acute HEV super infection has been associated with poor outcomes in patients with chronic HBV worldwide. Among patients with acute liver failure in the US, those who were positive for HEV IgG had lower overall survival, but HEV causing HBV flares in the US is not well documented. This case illustrated an immunocompetent patient with chronic HBV who suffered an HEV super infection, leading to a delayed response to a flare of chronic HBV infection.

Poster # 26

Patent Foramen Ovale (PFO) as an Atypical Cause of Night Sweats

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Night sweats are prevalent in about 25% of the population with etiologies ranging from relatively benign (idiopathic, neurological, medications) to concerning (infectious, malignancy, endocrine). Well apart from the effects of night sweats on quality of life and sleep, the spectrum of these etiologies and potential consequences of the more malignant causes make further investigation imperative. We report the case of a 25-year-old active duty US Army male, otherwise healthy, who presented with 7 months of persistent and drenching night sweats. Algorithmic workup for this condition is discussed and in this patient laboratory studies, sleep studies and imaging was otherwise negative for overt infection, hormonal derangements or malignancy.

Echocardiography plays a role in the investigation of cardiac related causes of night sweats, however these typically center on searching for valvular vegetations associated with infective endocarditis. However, in this patient echocardiography reveal ed a medium sized PFO as the protean cause of night sweats. PFOs and related respiratory shunting pathologies such as pulmonary emboli are known to cause non-trivial elevations in basal body temperature of up to 0.4C by effectively shunting blood flow away from aerated lung and thereby by-passing heat transfer and dissipation that usually occurs. This creates a pre-disposition toward hyperthermia which results in enzymatic denaturation with far reaching and lasting effects that include muscle breakdown, kidney injury, metabolic disturbances, coagulopathies and cognitive dysfunction. This temperature elevation due to PFO is demonstrably augmented both by PFO size as well as by exercise and therefore has significant consequences for active duty military personnel and their services who operate in physically demanding positions or geographically hot theatres of action. Since the prevalence of PFOs in the general population is about 25% the case is made for routine onetime echocardiography in active duty personnel.

Poster # 27

Severe Adenovirus Pneumonia Induced Respiratory Failure in Immunocompetent Adult

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Adenovirus is a common cause of self-limited upper respiratory tract infection in adults but has the potential to cause life-threatening pneumonia and shock in immunocompromised hosts, children and military recruits. Although rare, severe infection in immunocompetent adults has been documented in past. No approved definitive therapy exists currently.
A 58-year-old female with hypertension and prediabetes was referred to the emergency room in June with 5 days of fevers, chills, vomiting, watery diarrhea and dyspnea. She also suffered a syncopal episode on morning of admission. Patient-reported history of exposure to birds but denied any recent travel or sick contacts. Physical examination revealed fever, tachypnea, tachycardia, hypotension, hypoxia with oxygen saturation of 80% on room air and accessory respiratory muscle use. Breath sounds were absent over the right lower chest. Labs at admission were significant for a normal white cell count with lymphopenia, thrombocytopenia, elevated aspartate aminotransferase, procalcitonin and acute kidney injury. Chest X-ray revealed right-sided opacity confirmed as dense lobar consolidation involving right middle lobe and hazy bilateral lower lobe opacities on computed tomography scan of the chest. Urine streptococcus pneumoniae antigen, legionella antigen, influenza and severe acute respiratory syndrome coronavirus-2 (SARS CoV-2) polymerase chain reaction (PCR) was negative. Sputum gram stain and culture revealed normal respiratory flora. FilmArray® respiratory panel PCR was performed due to prominent gastrointestinal symptoms with accompanying lymphopenia which tested positive for adenovirus infection. The patient was placed under isolation and treated with supplemental oxygen, ceftriaxone and doxycycline. She subsequently developed worsening gastroenteritis and dyspnea over the next 3 days with dense bilateral lower lobar consolidation. Arterial blood gas revealed oxygen partial pressure of 50 mmHg on 15L Oxygen, but mechanical ventilation was held due to minimal work of breathing. The patient was also noted to have positional (right-lateral decubitus) hypoxia, likely due to intra-pulmonary shunting of blood. SARS CoV-2 was negative on repeat testing. Chlamydia and Chlamydophila antibody panel was also tested to rule out psittacosis which resulted negative. She w as treated with 14 days on antibiotic therapy with the transition to oral Levofloxacin before discharge on day 12. The patient also developed Reiter’s syndrome involving joints of hands and feet bilaterally which resolved 8 weeks after discharge.

This is a rare case of severe adenovirus pneumonia in an immunocompetent adult presenting with acute hypoxic respiratory failure. Although imaging revealed dense lobar consolidation suggesting bacterial etiology, early testing and diagnosis were guided by lymphopenia and prominent gastrointestinal symptoms. Cidofovir therapy was held due to the possibility of irreversible renal failure. Early diagnosis is critical in such cases prevent nosocomial outbreaks.

Poster # 28

Dementia among Native Hawaiians in the Pacific

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Background/Objectives:

Dementia has an economic and societal cost. Although there are studies regarding dementia and indigenous health separately, few study dementia in indigenous populations. Native Hawaiians have high cardiovascular risk, which contributes to dementia-causing diseases. This review analyzes the available research on Hawaiians and dementia.

Design:

PRISMA guidelines were used.

Participants:

The following search terms were used: (Alzheimer's OR dementia) AND (Hawaiian OR Hawaii OR API OR Pacific Islanders). There were 64 PubMed articles, 2 from Cochrane database, and 97 from EBSCO. Of the 23 relevant articles, 18 included Hawaiians as a part of the aggregated Asian and Pacific Islander group.

Measurement:

Methods, location, year, population studied, and results were pulled from the relevant articles and grouped as Hawaiian-specific and aggregated studies.

Results:

Within the Hawaiian-specific studies, 2 of 5 showed dementia at a younger age. Also, 2 emphasized the importance of care utilizing family and trust in the provider relationship. Within the aggregated studies, 3 demonstrated an earlier onset and subsequent younger population with dementia. There were also 3 studies showing more women affected. A positive theme that emerged was lower mortality. All articles viewed together showed more females who were affected, significance of family in care, and younger patients affected.

Conclusion:

A younger demographic suggests more life-years affected by dementia. This could mean a larger systemic and personal implications. Between the groups of studies, there were more females than males with dementia and family and provider trust were shown to be important in care. This is useful in future disease management strategies and the formulation of targeted therapies. However, this also demonstrates the need for more disaggregated studies of Native Hawaiian individuals with dementia.

Poster # 29

Causally Observed: Evaluating the Methodology of Large, Non-Randomized Hydroxychloroquine Studies

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The practice of medicine is inextricable from the science of causal inference. We care not only if something will happen, but how we can change it to help our patients. And yet, as our understanding of the biology of the human body has exponentially grown and miraculous new treatments are continuously discovered, the progresses in statistics and causality are sometimes lost on the wider medical consciousness. As a result, physicians may be missing important work from properly done observational analyses or placing undue influence or equivalence on poorly conducted trials. This phenomenon is most evident in spaces with an abundance of literature yet lacking in general consensus, and especially if the decision under review is urgent and critical in nature. There may be no better example setting than the current COVID-19 pandemic and no better investigational literature test series than the efficacy of hydroxychloroquine (HCQ) in treating hospitalized COVID-19-positive patients. This pr esentation will review published and pre-published papers studying HCQ as a case series in how medical professionals can evaluate literature for causal inference and investigate if conflicting results have possible methodological origins.

We focus on a select subset of highly publicized articles rather than evaluate the wider body of work necessary to establish the true causal effect. Using the Cochrane-endorsed Robins-I tool for evaluating non-randomized interventions as a foundation, we explore the potential impact of immortal-time bias, decision to include post-interventional covariates, propensity-adjustment methods and other analytical differences. We then note these study's use of sensitivity analyses and how they attempt to estimate the effect of uncontrollable factors. Finally, we supplement our own analysis with that of experts before making general evaluations on the strengths of the presented evidence.

Of the three major large observational trials, two suggested HCQ had no benefit (Geleris, Rosenberg) while one displayed a mild increase in survival (Arshad). These differences may be traced to methodological origins that are subtle but nonetheless important to identify. Of note, the Detroit study (Arshad) included post-intervention covariates that may have resulted in a counterfactual association. Moreover, they did not test their vulnerability to uncontrollable factors as thoroughly and may be at greater risk for confounding, immortal time bias and unbalanced comparators. While it would be wrong to outright disregard the findings from the Detroit trial, it should not be given equal weight to the two studies from NYC.

This presentation is not a referendum on decisions made to prescribe or withhold HCQ. It is a methodological review so that physicians can more precisely estimate purported risks and benefits from observational studies in settings where definitive randomized controlled trials are unavailable.

Poster # 30

Exploring Key Elements of Successful Distance Learning Programs: A Case Study in Palau

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Background: The Pacific faces multiple healthcare crises, including high rates of noncommunicable diseases, infectious disease outbreaks, and susceptibility to natural disasters. These issues are expected to worsen in the coming decades, increasing the burden on an already understaffed healthcare system. Telehealth is not new to the Pacific, but improvements in technology provide increased accessibility, especially in remote areas, all while reducing costs. Telehealth includes distance learning; a form of education that can help alleviate many healthcare issues by providing continuing education to healthcare professionals and upskilling staff, while decreasing costs. This study examined distance learning programs at the Ministry of Health (MOH) in the Republic of Palau, a Pacific island nation, and identified key elements to their successful distance learning programs.

Methods: Staff at the Belau National Hospital in Koror, Palau were interviewed to assess distance learning programs utilized. This included physicians, IT personnel, public health members, and department managers of allied health. In total, 34 people were interviewed. Standardized questions and surveys were conducted in person throughout the month of July 2019.

Results: Two examples of successful distance learning programs were identified. Success in this case referring to applicants completing the program and returning to work at the MOH. Looking at the factors that made these programs successful, as well as consulting with staff who undertook other distance learning programs, four factors for success were determined: having a cohort, having a facilitator, dedicated study time off from work, and motivation. Among the departments, 100% surveyed stated that they would like to use distance learning, most commonly for professional betterment (88%) and upskilling of staff (82%).

Discussion: In countries as geographically isolated as the Pacific, with poor access to specialists and resources, telehealth has the potential to radically change how healthcare is delivered. Creating successful distance learning programs was dependent on supporting factors such as a cohort, course facilitator, dedicated study time, and work or financial incentive. Developing distance learning programs is paramount for Pacific Island nations as this offers local training, encouraging individuals to stay in their country for work, as retention with foreign training is a common issue. Palau shares similar resources and faces similar challenges as other countries in the Pacific and the lessons learned from their successful programs can be adapted to help other Pacific nations develop their own distance learning programs.

Poster # 31

A Rare Case of Right-Sided Aortic Root Complicated by Aneurysmal Kommerell's Diverticulum

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A right-sided aortic arch is a rare congenital anatomical defect of the aorta, found only in about 0.1% of the adult population. Unless other concomitant congenital heart defect is present, it is usually asymptomatic and found incidentally in adulthood. Kommerell's diverticulum (KD) is a diverticulum located at the proximal descending aorta that gives rise to an aberrant subclavian artery, and it has been described in patients with right-sided aortic arch. KD is usually asymptomatic but can cause dyspnea, dysphagia, cough, or chest pain, and if it becomes aneurysmal, can compress onto the adjacent structures.

A 66-year-old male with past medical history of coronary artery disease (CAD), hypertension, hyperlipidemia, insulin-dependent type 2 diabetes, COPD, obstructive sleep apnea, and non-small cell lung cancer status post resection in 2007, presents with persistent dyspnea and exercise intolerance for several years. Upon presentation to the pulmonology clinic, patient had a long history of hospital visits for chronic atypical retrosternal chest discomfort and dyspnea on exertion. Workup for ischemic heart disease was relatively unremarkable; echocardiogram showed normal valvular function without wall motion abnormality, and computed tomography (CT) coronary angiogram demonstrated non-obstructive CAD with calcified lesions. Pulmonary function testing was consistent with an obstructive lung disease pattern. Interestingly, serial CT chest imaging done for lung cancer surveillance incidentally found a right-sided aortic arch with aberrant left subclavian artery coursing posterior to the thoracic esophagus with diverticulum of Kommerell, and the origin of the left subclavian artery was enlarged to 2.8 cm with probable mass effect upon the posterior wall of the esophagus. Follow up CT chest 12 years later showed ectasia of the ascending aorta measuring 3.7 cm and distal arch measuring 4 cm, dilated origin of subclavian artery measuring 3 cm, and again with mass effect upon posterior thoracic esophagus. Findings appeared to be stable, and the patient's symptoms were treated with continued optimization of his underlying CAD, COPD, and OSA.

Despite its rarity, this radiologic finding is clinically relevant as there is significant morbidity associated with symptoms from the compression of mediastinal structures and also high mortality with aortic rupture. Importantly, recent histological studies have shown cystic medial necrosis in the diverticulum wall, which may explain the increased risk of aortic dissection and rupture in aneurysmal KD. Treatment consists of surgery, and indications include presence of symptoms, as well as the size and configuration of the diverticulum. This case highlights the importance of keeping the differential broad when evaluating patients with chronic dyspnea and recognizing the significance of KD in patients with right-aortic arch variant.

Poster # 32

Warfarin-Associated Non-Uremic Calciphylaxis –Diagnostic Challenges and Treatment with Sodium Thiosulfate: A Case Report

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Calciphylaxis is a rare disease with a high mortality rate. It most frequently occurs in patients with end-stage chronic kidney disease but may also be associated with chronic warfarin therapy. Warfarin-associated calciphylaxis is often difficult to diagnose due to its rarity, however it is important to keep this diagnosis in the differential of ulceration and skin necrosis with severe pain in a patient taking warfarin. Unfortunately, there are limited management options and no set guidelines on optimal therapies, although some success has been observed with intravenous sodium thiosulfate, aggressive wound care and discontinuation of warfarin.

We report a case of a 74-year-old female patient with a past medical history of atrial fibrillation on warfarin, chronic kidney disease stage 3, severe obesity, uncontrolled diabetes, and hypoalbuminemia who presented to the vascular surgery clinic due to concerns for cellulitis secondary to superinfected chronic left lower extremity ulcers. Despite medical management with antibiotics and wound care, the patient continued to have ongoing severe pain, which prompted the medical team to obtain a skin biopsy which revealed calciphylaxis. Warfarin was discontinued and switched to apixaban, and she was treated with sodium thiosulfate 25mg three times per week with subsequent improvement in both the appearance of the ulcerations as well as her severity of pain over the next months. Her wounds resolved after 8 months of treatment.

Non-uremic warfarin-associated calciphylaxis remains a diagnostic and therapeutic challenge since it is extremity rare, and therefore should be kept in the differential of painful, non-healing skin ulcerations. The pathogenesis is not fully understood, however current evidence suggests that warfarin inhibits the vitamin K-dependent matrix G1a protein, which is a protein that prevents calcium deposition in arteries. Warfarin was also shown to promote thrombosis by acting on vascular endothelial cells and decreasing protein S secretion by more than 90%. Ultimately our patient's ulcers progressively healed, and the pain was significantly improved with no signs of infection. This is consistent with previous findings that non-uremic calciphylaxis may carry a better prognosis than that of uremic calciphylaxis. In this case, the patient was diagnosed relatively early in the course, which may have contributed to the overall positive outcome and highlights the need for clinicians to be aware of warfarin-associated calciphylaxis to necessitate prompt diagnosis and appropriate management.

Index:

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There are a number of unmet needs in the acute treatment of migraine, which often leave patients dissatisfied with suboptimal results. Given the staggering consequences of migraine, there is a need for acute therapy to help patients eliminate migraine pain and return to normal function.

Nurtec™ ODT (rimegepant) is a novel approach to addressing critical unmet needs in the acute treatment of migraine.

Take a closer look at the mechanism of action, comprehensive clinical trial program, and proven results that support the rapid and sustained response that Nurtec ODT can deliver in just 1 dose.

FEATURED VIDEOS

Nurtec ODT: A Novel Approach to Targeting Underlying Migraine Processes, With 1-Dose Delivery of Results

Nurtec ODT: Exploring the Comprehensive Clinical Trial Program Supporting Rapid & Sustained Efficacy

Nurtec ODT: Addressing Unmet Patient Needs With an Acute Treatment That Delivers Well-Tolerated Results

Visit **www.treatmentperspectives.com/migraine/Biohaven** for exclusive access to these expert discussions.

INDICATION

Nurtec™ ODT (rimegepant) is indicated for the acute treatment of migraine with or without aura in adults.

Limitations of Use

Nurtec ODT is not indicated for the preventive treatment of migraine.

IMPORTANT SAFETY INFORMATION

Contraindications: Hypersensitivity to Nurtec ODT or any of its components.

Warnings and Precautions: If a serious hypersensitivity reaction occurs, discontinue Nurtec ODT and initiate appropriate therapy. Serious hypersensitivity reactions have included dyspnea and rash, and can occur days after administration.

Adverse Reactions: The most common adverse reaction was nausea (2% in patients who received Nurtec ODT compared to 0.4% in patients who received placebo). Hypersensitivity, including dyspnea and rash, occurred in less than 1% of patients treated with Nurtec ODT.

Drug Interactions: Avoid concomitant administration of Nurtec ODT with strong inhibitors of CYP3A4, strong or moderate inducers of CYP3A or inhibitors of P-gp or BCRP. Avoid another dose of Nurtec ODT within 48 hours when it is administered with moderate inhibitors of CYP3A4.

Use in Specific Populations: *Pregnant/breast feeding:* It is not known if Nurtec ODT can harm an unborn baby or if it passes into breast milk. *Hepatic impairment:* Avoid use of Nurtec ODT in persons with severe hepatic impairment. *Renal impairment:* Avoid use in patients with end-stage renal disease.

Please see full Prescribing Information.

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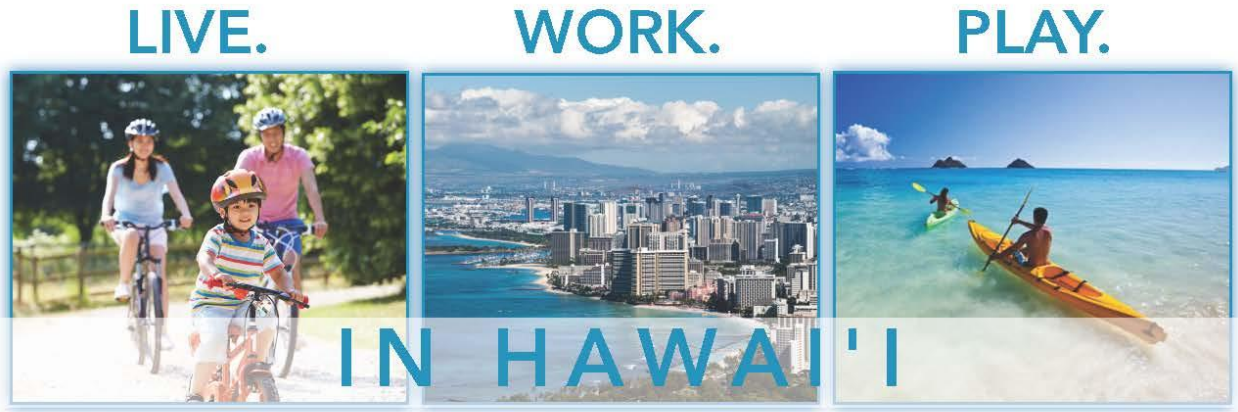

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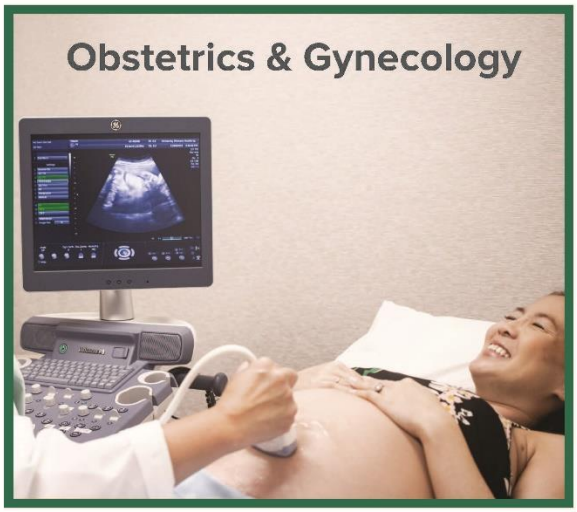

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