MARCH 2023 | THE PREMED SCENE'S MONTHLY MEDICAL NEWSLETTER

CROSSROADS

THE OFFICIAL NEWSLETTER OF THE PREMED SCENE

Rising Stars in Medicine: Troy Bannister

Dear medical newsletter readers,

Happy March! Today, we bring to you the most recent news in medical research! Adeba Mukul is your sixth Rising Stars in Medicine writer, talking about Troy Bannister and their work in founding Particle Health. Then, I focus on the efficacy of ivermectin against COVID-19. Next, Siri Nikku spreads greater awareness regarding POTS. Ilana Saidov talks about hypertrophic cardiomyopathy. Finally, Adeba ends by sharing more correlations between e-cigarettes and cigarettes.

Please enjoy reading The Premed Scene's March 2023 Medical Newsletter! Till next month.

Aprile Bertsos

Inside:

Rising Stars in Medicine: Troy Bannister

BY ADEBA MUKUL

When was the last time you went to the doctor's office and didn't see a computer when you checked in with the receptionist? In America, digitized health records are the rule, not the exception. However, patients do not often have readily available access to said health records. Particle Health is a company dedicated to collecting and sharing health information to patients in consumers (of course, in compliance with HIPAA)!

CEO Troy Bannister founded Particle Health in 2018. Particle Health aggregates and analyzed over 270 million American patients' data; these large datasets are used to make healthcare policy decisions, among other things. The company also releases insightful white papers on how healthcare data is spread across America, both in terms of connectivity and availibility. With over 10 years of experience in the healthcare field, Troy Bannister has accomplished a lot in his life. He was a medical student, he worked as an EMT, he was a clinical researcher, and he is also a CEO!

Troy Bannister is well past rising on his way to the stars of medicine and his work will play a role in every healthcare students' lives. How we access and share information in the digital age is critical to the quality of care provided by healthcare professionals. Companies like Particle Health play a significant role in this important element of healthcare and Troy Bannister is at the forefront of this humongous network of patients.

Take a look at Troy Bannister's LinkedIn and his interview with Healthcare Innovation for more information! Here's the link: https://www.hcinnovationgroup.com/interoperability-hie/trusted-exchange-framework-and-common-agreement-tefca/article/21294404/qa-particle-health-ceo-troy-bannister-on-the-state-of-health-information-networks

Ivermectin: Powerful Against COVID-19?

BY APRILE BERTOMO

At the onset of COVID-19, researchers around the world gathered together to understand how to best combat the virus. 2020 brought forth a multitude of potential drugs to potentially fight against COVID-19. One such drug that piqued the interest of many was ivermectin. Ivermectin was initially thought to be effective because of its label as an anti-parasitic drug. The drug is typically utilized for onchocerciasis and strongyloidiasis. Despite the potential reliability of the drug and its beneficial effects, scientists noted that more research needed to be done through more randomized trials to determine how helpful it could be against COVID-19. Consequently, Naggie et al., 2023 researched how helpful ivermectin would be against mild to more moderate cases of the virus through dosage that was at its maximum of 600 micrograms/kilogram over the course of six days.

Overall, 1206 participants at ages older than 30 years old who had COVID-19 and had two symptoms of acute infection at the minimum for less than 7 days were part of a nationwide trial and were, consequently, included in the study. These subjects were part of a platform known as the Accelerating COVID-19 Therapeutic Interventions and Vaccines 6 platform, also known as ACTIV-6. The subjects received either ivermectin or a placebo at random, following the objective previously stated. The main outcome evaluated was the duration of time until sustained recovery. Sustained recovery was denoted as a minimum of three days consistently without displaying any associated symptoms.

At the conclusion of the study, it was found that individuals who were prescribed ivermectin took a median of 11 days to sustained recovery. Similarly, individuals who were prescribed the placebo took a median of 11 days to sustained recovery as well. Consequently, such research supports the conclusion that ivermectin would not necessarily allow for a quicker sustained recovery. Such a conclusion may be disheartening to hear; however, they allow for researchers to slightly narrow down possibilities for treatment for COVID-19. More research is being done to evaluate the efficacy of other potential treatments, so there is hope for sustained recovery following a coronavirus diagnosis.

Works Cited:

https://jamanetwork.com/journals/jama/fullarticle/2801827s.

The Diagnosis and Management of POTS

BY: SIRI NIKKU

Postural orthostatic tachycardia syndrome (POTS) is a blood circulation disorder that is defined by two factors: a set of symptoms that exist while standing up and heart rate gradually increasing from horizontal position to standing of 30 beats per minute in adults and 40 beats per minute in teenagers which is calculated during the first 10 minutes of standing. Postural means the position of the body, orthostatic is standing upright, tachycardia is elevated heart rate, and syndrome is a collection of symptoms.

POTS is only diagnosed when there is no severe dehydration or blood loss and orthostatic hypotension (low blood pressure when there is a 20 mm Hg or 10 mm Hg drop in diastolic or systolic blood pressure respectively) is not there. Some symptoms include lightheadedness, fainting occasionally, brain fog, tiredness, inability to exercise strenously, headaches, blurry vision, nausea, and palpitations. There is not a full understanding of the cause for POTS but it seems to be more common in women and is diagnosed a lot in adolescents.

POTS can be determined with a 10 minute standing test and a lot of people's POTS symptoms react to a mixture of diet changes, medication, physical therapy, and other modifications.

POTS is a disorder of the autonomic nervous system, which is a part of the nervous system that has to do with maintaining unconscious functions like heart rate and blood temperature.

Elevated heart rate is associated with POTS due to blood vessels not tightening in someone with POTS when blood is needed to go to the brain, leading to blood pooling in the lower extremities and not enough blood reaching the brain. This leads to the brain fog and lightheadness people with POTS experience.

Exercise treatment options for POTS include aquatic therapy and manual physcial therapy building up in intensity of exercise for patients. Medications will also target improving blood volume, ensuring kidneys keep sodium in, helping blood vesel tightening, and reducing heart rate. Wearing compression garments can help with preventing the pooling in the lower body as well.

Sources
https://www.hopkinsmedicine.org/health/conditions-and-diseases/postural-orthostatic-tachycardia-syndrome-pots

An Overview of HCM Findings in March 2023

BY ILANA SAIDOV

Hypertrophic cardiomyopathy (HCM) is a genetic condition that affects the structure and function of the heart. The condition can cause the thickening of the heart muscle and additional life-threatening complications. This March, there have been several studies that shed light on new and upcoming HCM management and treatment.

A study published by Neitzel revealed the link between severe infection and the risk of cardiovascular disease in patients with the condition. The study found that individuals with HCM who experienced a severe infection had a higher chance of cardiovascular events such as heart attack, stroke, and heart failure. This highlights the importance of carefully managing infections in patients with HCM to prevent serious complications.

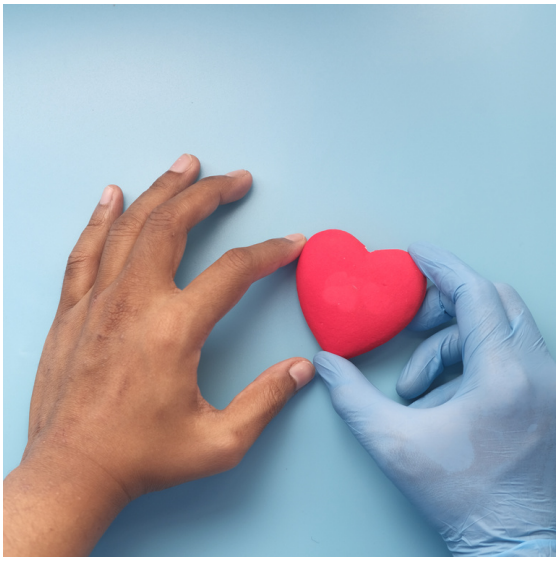
The LIVE-HCM study conducted by Reitman, provided insights into HCM management. The study found that early diagnosis and risk stratification can improve outcomes for patients with HCM. Additionally, it highlighted the importance of personalized treatment plans that consider each patient's individual needs and characteristics.

n a mouse model study, researchers investigated using base editing and CRISPR-Cas9 to prevent HCM. The study, led by Schrage and Westermann, found promising results that suggest gene editing techniques could be used to avoid HCM in the future. While additional research is needed, this study offers hope for new treatment options for people with HCM.

Other studies published in March 2023 explored the relationship between obesity and congestive symptoms in heart failure patients and the potential role of PTEN inhibition in septic cardiomyopathy. These studies provide additional insights into the complex nature of HCM and the potential for new treatments and prevention strategies.

The research published thus far offers valuable insights into HCM and its management. As we learn more about this condition, we can better understand its causes and develop new treatments to improve patient outcomes.

Source: Home Page: International Journal of Cardiology, https://www.internationaljournalofcardiology.com/.



Is There A Correlation: E-Cigs and Cigarettes?

BY ADEBA MUKUL

Electronic cigarettes, more commonly known as vapes or e-cigs, have become more popular than traditional cigarettes among the younger generations. Marketed as less dangerous than traditional cigarettes, e-cigs are a regular sight in high schools and colleges. However, research suggests that e-cigarettes are just as dangerous for the body; notable consequences include addiction, lung disease, and brain development delays. Additionally, research has shown that adolescents who smoke e-cigs have a positive association with smoking traditional cigarettes. However, there is little research on whether adolescents smoke persistently after initiating the usage of traditional cigarettes.

Dr. Ruoyan Sun, Dr. David Méndez, and Dr. Kenneth E. Warner decided to assess the association of e-cig use with subsequent persistent cigarette smoking in this study. Using data collected from 2015 to 2019 in 4 waves, 8761 adolescents' self-reported measures about cigarettes usage were combined and analyzed. It was found that those who used electronic cigarettes at the baseline had "significantly higher odds of continuing smoking 2 years after their initial smoking." However, the overall absolute risk of persistent smoking for both e-cigarette users and nonusers is very low. Less than 2.5% of e-cig users intiated and continued smoking after 3 years. It is predicted that smoking among the adolescent and young adult population will decrease more in the future.

Works Cited:
Sun R, Méndez D, Warner KE. Association of Electronic Cigarette Use by US Adolescents With Subsequent Persistent Cigarette Smoking. JAMA Netw Open. 2023;6(3):e234885. doi:10.1001/jamanetworkopen.2023.4885