Allie Crocker

Professor Marshall

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Postural Orthostatic Tachycardia Syndrome and COVID-19 Infection and Vaccination

Background

The COVID-19 Pandemic has shed a much-needed light on a debilitating condition called Postural Orthostatic Tachycardia Syndrome (POTS). According to Johns Hopkins Medicine, POTS is "a blood circulation disorder characterized by two factors: a specific group of symptoms that frequently occur when standing upright, and a heart rate increase from horizontal to standing of at least 30 beats per minute in adults, or at least 40 beats per minute in adolescents, measured during the first 10 minutes of standing." POTS has no known cure, and its prevalence is over 200,000 cases per year in the United States. It is most common in biological females and in the age group of 15-50. Left untreated, it can cause heart failure, injury due to falls, and a generally overworked heart.

Relevance to Public Health

Since the COVID-19 pandemic, there has been an increase in the number of patients being diagnosed with POTS, especially when defined as "long-haulers", who deal with an extended period of symptoms after COVID-19 infection has resolved and even after receiving the COVID-19 vaccination. A research article published in December 2022 entitled *Apparent risks of postural orthostatic tachycardia syndrome diagnoses after COVID-19 vaccination and SARS-Cov-2 Infection* by Kwan et al. discusses the correlation between COVID infection and subsequent POTS diagnosis. This combines both the public health issue of infectious disease and

the issue of chronic illness (especially ones that are brought out of a dormant state or are worsened by infections). COVID-19 impacted so many people through infection or vaccination, therefore this is extremely important to public health. Vaccination can be considered a form of primary prevention, but this could potentially have led to problems that also impacted people who are COVID long-haulers. POTS is also a condition that impacted many people even before the COVID-19 pandemic, and this spike in prevalence is encouraging more research and treatments for POTS. Many people are just now realizing how disabling POTS can be, which pushes it higher up on the agenda in public health, impacting COVID long-haulers, vaccinated individuals who developed POTS symptoms post-vaccination, and patients who had POTS before it became so prevalent.

Popular Media Coverage vs. Original Published Research

The first noticeable difference between the popular media coverage and the original published research is the title. The original research is titled *Apparent risks of postural orthostatic tachycardia syndrome diagnoses after COVID-19 vaccination and SARS-Cov-2 Infection* and the media coverage is titled *Disorder causing dizziness, fainting now associated with COVID, study shows*. The popular media coverage is a bit fear-inducing given that it brings attention to dizziness and fainting, which are very unpleasant to most people. The title there is also more causal than the research title. This makes sense, because research is not meant to invoke fear, rather educate based on evidence through thorough studies. One important thing to note is that fainting is a symptom of POTS in only about 30-60% of patients (*Symptoms - PoTS UK*, 2021). The research also does not mention fainting, syncope, passing out, or any other related terms, so it was strictly the media's decision to include this in the title, likely to increase the number of readers and to provoke an emotional response.

Another difference between the two sources is that the media coverage utilizes a specific case of a woman with POTS to discuss needed action, making it more opinion-based than the research article. The media coverage discusses the story of Jennifer Ramey, and how she used to be very active and then developed long-COVID, which disabled her even as a nurse who was otherwise extremely healthy. The research sample size was a cohort of 284,592 vaccinated individuals, and did not discuss the occupations or lifestyles of those people as it was less relevant given the size of the study.

My Thoughts on the Popular Media Coverage, and Causes of Concern

As a POTS patient, and one that has been dealing with the condition since before the COVID-19 pandemic, I understand and acknowledge that I have some bias in this opinion. However, I do believe that there is an agenda to invoke emotional responses via media that is accomplished through fear mongering or generally using terms to cause public alarm. I am concerned that the media coverage is inaccurately worrying people about the experience of POTS. While it is a disabling condition, it does not commonly present as fainting, and thus I believe that should have been excluded from the title of the article.

I believe, however, that it is extremely important to raise awareness about POTS and about the potential correlations between COVID-19 infection and vaccination with the condition. I think that this research and this media coverage has enabled POTS to move up on the public health agenda, creating more opportunities for research and treatments that will benefit a large portion of the population who are currently or will be impacted by POTS or POTS symptoms in their lifetime.

How This Coverage Might Affect Public Health

The popular media coverage may be stress-inducing and cause mental health concerns such as anxiety when considering the impact on public health. It also may be frustrating to hear about how disabling POTS is when newly diagnosed or for patients who have been dealing with the condition for a long time, generating more mental health concern.

Another concern is that people who are anti-vaccination or who are skeptical about vaccines may be negatively impacted by this media coverage and/or the research, since it seems that there *may* be a correlation to POTS. This may discourage people who are unvaccinated or not fully vaccinated from completing their dosages, and may further the spread of COVID-19, especially to at-risk populations.

However, I believe that POTS being on the agenda now is providing opportunities for more research and creation of treatments (and possibly a cure some day), which was beginning to look nearly impossible before the COVID-19 pandemic hit. This can positively impact public health by helping to manage chronic conditions and thinking about potential primary preventions.

Conclusion

Research has shown a possible correlation between COVID-19 infection and vaccination with Postural Orthostatic Tachycardia Syndrome. Media coverage has been overly concerned with emotion-inducing portrayal of this study, but there are potential positive outcomes for public health because approaching this issue simultaneously addresses infectious diseases and chronic illnesses (especially ones that can be brought on or worsened by those infectious diseases). It is important to raise awareness for conditions like POTS, but it is only now that many otherwise healthy members of the population have begun to experience its disabling

factors that it has been brought to the forefront of media coverage under the category of public health.

Works Cited

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