Thoughts on 'The Clinical Significance of Relative Bradycardia'

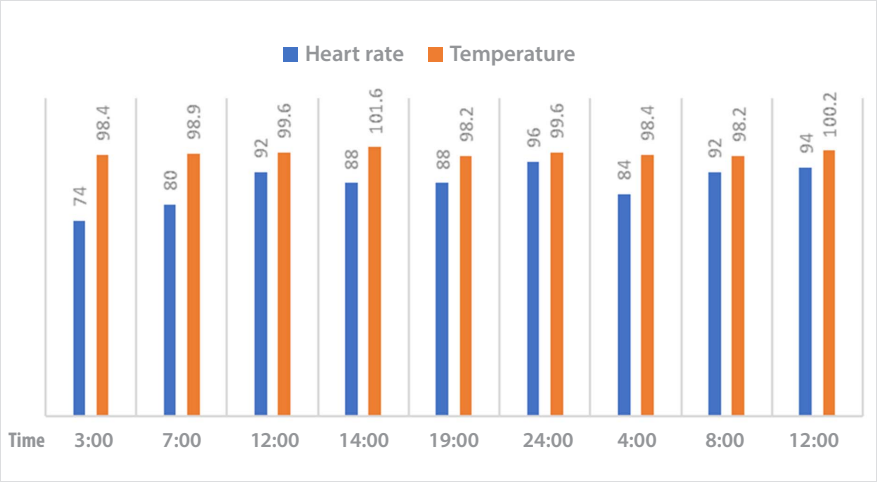
To the Editor:

We read with great pleasure the recent article published in your esteemed journal by Ye et al titled "The Clinical Significance of Relative Bradycardia".[1] We would like to congratulate the authors for the excellent case report and would like to share our similar experience of relative bradycardia in a patient with Coxsackie virus infection, which has not been reported by the authors or before.

A 21-year-old man with no significant past medical history presented to the Emergency Department with complaints of fever and lightheadedness for 2 days. He also had associated fatigue and generalized body aches and joint pains. On examination, he was comfortable and his vitals were normal. Systemic examination was unremarkable. He was found to have leukcopenia (white blood cell count = 3,900) and thrombocytopenia (platelet = 69,000). The biochemical panel was normal except for increased troponin from 0.182 to 0.462 and 0.525. His electrocardiogram showed biphasic T waves in V3 and V4. However, there was no shortening of the PR segment, ST elevation, or conduction block. Echocardiogram demonstrated normal left ventricular function without any valvular pathology. During his hospital stay, a pattern of relative bradycardia was noticed (Figure). He was asymptomatic with respect to his bradycardia. Etiological workup was positive for Coxsackie virus. Other etiological agents for acute febrile illness were negative. Lyme screen was negative. With conservative medical management, his symptoms improved, and he was discharged in a stable condition.

Authors of the article have done an excellent job identifying the different infectious agents that have been reported to cause relative bradycardia. However, we were surprised to find that Coxsackie virus has not been reported to cause the same. Coxsackie virus is a single-stranded RNA virus of the genus Enterovirus. It has protean clinical manifestations including acute hemorrhagic conjunctivitis, hand-foot-and-mouth disease, herpangina, myocarditis, and pleurodynia.[2]

Figure. Depiction of Heart Rate At Time of Fever



Even though the mechanisms proposed are diverse, we agree with the authors regarding the fact that the bedside recognition of pulse-temperature dissociation also known as Faget's sign, Liebermeister's rule, and relative bradycardia can become a significant tool in assisting the clinician with clinical clues into potential etiologies of disease, especially infectious diseases.[1,3]

Ajay Kumar Mishra, MD; Kamal Kant Sahu; Kranis Mark; Saint Vincent Hospital, Worcester, Mass.

Correspondence: Ajay Kumar Mishra, MD, Dept of Internal Medicine, Saint Vincent Hospital, Worcester, MA, 01608; phone 508.762.6692; email Ajay.Mishra@stvincenthospital.com.

REFERENCES

1. Ye F, Hatahet M, Youniss MA, Toklu HZ, Mazza JJ, Yale S. The clinical significance of relative bradycardia. *WMJ.* 2018;117(2):73-78.

2. Vijayaraghavan PM, Chandy S, Selvaraj K, Pulimood S, Abraham AM. Virological investigation of hand, foot, and mouth disease in a tertiary care center in South India. *J Glob Infect Dis.* 2012;4(3):153-161. doi:10.4103/0974-777X.100572.

3. Ye F, Winchester D, Stalvey C, et al. Proposed mechanisms of relative bradycardia. *Med Hypotheses.* 2018;119:63-67. doi: 10.1016/j.mehy.2018.07.014. Epub July 17, 2018.

advancing the art & science of medicine in the midwest

WMJ

WMJ (ISSN 1098-1861) is published through a collaboration between The Medical College of Wisconsin and The University of Wisconsin School of Medicine and Public Health. The mission of *WMJ* is to provide an opportunity to publish original research, case reports, review articles, and essays about current medical and public health issues.

Visit www.wmjonline.org to learn more.