

Letters

Takotsubo Syndrome Associated With COVID-19



And the InterTAK Diagnosis Score?

Since the onset of the coronavirus disease-2019 (COVID-19) pandemic, several case series have noted cardiac arrhythmias, cardiomyopathy, acute coronary syndromes, and cardiac arrest in patients with COVID-19 infection (1). Several acute respiratory infections may result in activation of coagulation pathways, proinflammatory effects, and endothelial cell dysfunction. The mechanisms of myocardial injury in COVID-19 infection remain to be understood, however (1,2). The article by Minhas et al. (3) in *JACC: Case Reports* describes 1 of the first cases of Takotsubo syndrome (TTS) triggered by COVID-19 infection. The InterTAK Diagnostic Score was developed by the International Takotsubo Registry to assess the likelihood of a TTS diagnosis. The scoring criteria are based on clinical and electrocardiographic features to predict the probability of TTS and to distinguish TTS from acute coronary syndromes. Patients with 30 score points have a predicted probability of 90% of TTS. TTS case descriptions in patients with COVID-19 did not refer to the InterTAK score to evaluate the probability of TTS in these patients (4,5). It would be important to know whether InterTAK scoring could also contribute to distinguishing electrocardiographic abnormalities in patients with COVID-19 and whether the InterTAK score would allow clinicians to predict the likelihood of TTS during the COVID-19 outbreak.

*Pascal A. Reper, MD
Fabie Oguz, MD
Julie Henrie, MD
Geoffrey Horlait, MD

*Department of Critical Care
CHU UCL Namur, Godinne (University Hospital,
Université Catholique de Louvain)
Rue Dr G. Therasse 1
5530 Yvoir
Belgium
E-mail: pascal.reper@uclouvain.be
<https://doi.org/10.1016/j.jaccas.2020.07.047>

© 2020 The Authors. Published by Elsevier on behalf of the American College of Cardiology Foundation. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Please note: The authors have reported that they have no relationships relevant to the contents of this paper to disclose.

The authors attest they are in compliance with human studies committees and animal welfare regulations of the authors' institutions and Food and Drug Administration guidelines, including patient consent where appropriate. For more information, visit the *JACC: Case Reports* [author instructions page](#).

REFERENCES

1. Mehra MR, Desai SS, Kuy S, Henry TD, Patel AN. Cardiovascular disease, drug therapy, and mortality in Covid-19. *N Engl J Med* 2020 May 1 [E-pub ahead of print].
2. Sala S, Peretto G, Gramegna M, et al. Acute myocarditis presenting as a reverse tako-tsubo syndrome in a patient with SARS-CoV-2 respiratory infection. *Eur Heart J* 2020;41:1861-2.
3. Minhas AS, Scheel P, Garibaldi B, et al. Takotsubo syndrome in the setting of COVID-19 infection. *J Am Coll Cardiol Case Rep* 2020 May 1 [E-pub ahead of print].
4. Ghadri JR, Wittstein IS, Prasad A, et al. International expert consensus document on takotsubo syndrome (part 1): clinical characteristics, diagnostic criteria, and pathophysiology. *Eur Heart J* 2018;39:2032-46.
5. Ghadri JR, Cammann VL, Jurisic S, et al. A novel clinical score (InterTAK Diagnostic Score) to differentiate takotsubo syndrome from acute coronary syndrome: results from the International Takotsubo Registry. *Eur J Heart Fail* 2017;19:1036-42.

REPLY: Takotsubo Syndrome Associated With COVID 19



And the InterTAK Diagnosis Score?

We would like to thank Dr. Reper and colleagues for their comments on our recent case report describing a patient with Takotsubo syndrome (TTS) triggered by coronavirus disease-2019 (COVID-19) (1), as well as for suggesting the use of the InterTAK Diagnostic Score for patients with TTS in this setting. For our patient, the calculated InterTAK score is 50 (25 points for female sex, 13 points for physical trigger, and 12 points for the absence of ST-segment depression). As stated in the original description of this score, "patients with 50 points have a probability of 18%...of suffering from TTS" (2). Although the InterTAK score may be helpful in other patients with TTS, in the case of our patient the score as calculated did not strongly support or refute a diagnosis of TTS. For our patient, the classic imaging pattern on the initial echocardiogram and the reversibility seen on a subsequent echocardiogram were more consistent with TTS, thus leading to our diagnosis. We acknowledge that this is