# The Role of Targeted-Temperature Management Post-Ventricular Fibrillation in the COVID19 Positive Patient

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## Background

Targeted temperature management (TTM) is a mainstay of treatment for post-cardiac arrest (PCA) patients with return of spontaneous circulation (ROSC). This includes both in-hospital cardiac arrest (IHCA) and-out-of-hospital cardiac arrest (OHCA) with an initial shockable rhythm. The role of TTM in COVID19 PCA patients has yet to be studied.

## Decision Making

All QTc prolonging medications were held and electrolytes were repleted. Dexamethasone and remdesivir were started. PCA and after completion of TTM, the previously seen global hypokinesis on echocardiogram 24-hour post-therapeutic cooling had resolved. Following extubation, the patient made a full recovery. However, she left against medical advice before cardiac magnetic resonance imaging could be obtained.

## Conclusion

There are limited to no data regarding TTM in COVID19 positive patients. Its role in COVID19-related cardiomyopathy, inflammation, and hypercoagulability requires further investigation. Our case demonstrates the benefits of swift therapeutic cooling in a COVID19 positive patient. Care must be taken in patients with underlying electrolyte abnormalities and medications causing QTc prolongation, as COVID19 infection can lead to myocarditis or pericarditis, precipitating arrhythmia. In PCA COVID19 positive patients, TTM can be a viable therapeutic option.

## Case

A 23-year-old woman presented with chest pain for one day. Prior to admission, she was given a combination of ondansetron, morphine, and metoclopramide at an outside hospital for abdominal pain. Laboratory studies showed electrolyte derangements and troponin of 0.46 ng/mL.

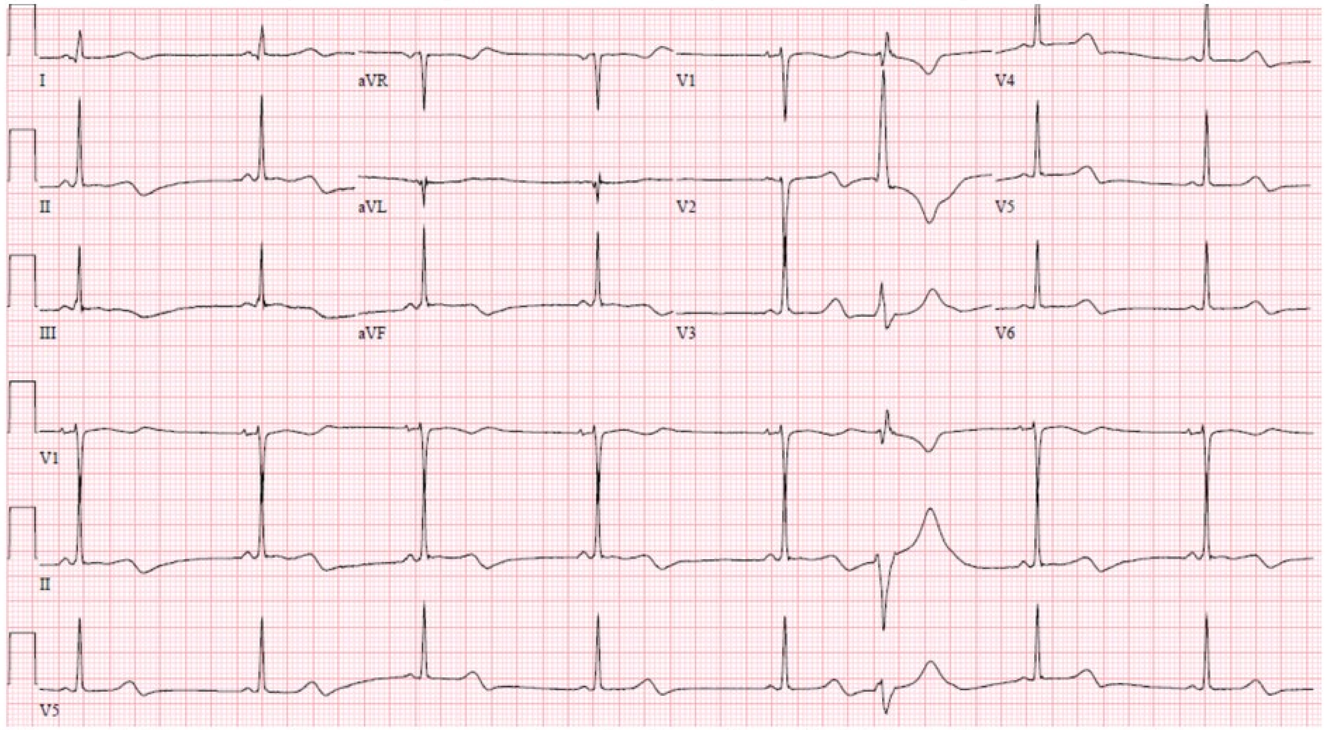


**Figure 1**: Electrocardiogram showing sinus bradycardia with biphasic T waves in inferior, anterior, and lateral leads, as well as a premature ventricular contraction and prolonged QTc.

Electrocardiogram showed sinus bradycardia, new premature ventricular contractions, biphasic T waves in inferior and lateral leads and a QTc of 529 milliseconds (Figure 1). The patient went into ventricular fibrillation, had a cardiac arrest, and achieved ROSC after successful defibrillation. The patient was unable to follow commands and lacked purposeful movements. Therefore, TTM was pursued. Ultimately, the patient was found to be COVID19 positive.

***Disclosures**: All authors have no disclosures.*