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## Cardiovascular screening in olympic athletes before and after SARS-CoV-2 infection

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**Background:** Conflicting results on the cardiovascular involvement after SARS-CoV-2 infection generated concerns on the safety of return-to-play (RTP) in the athletic population. However, these data are mainly based on Troponin and imaging findings.

**Purpose:** Aim of the study was to evaluate the prevalence of cardiac involvement after COVID-19 in Olympic athletes, who had previously been screened in our pre-participation program.

**Methods:** Since November 2020, all consecutive Olympic athletes presented to our Institute after COVID-19 prior RTP were enrolled. The protocol was dictated by the Italian governing bodies and comprised: 12-lead ECG, blood test, cardiopulmonary exercise test (CPET), 24-hours ECG monitoring, spirometry. Cardiovascular Magnetic Resonance (CMR) was also performed. All Athletes were previously screened in our Institute as part of their periodical pre-participation evaluation.

**Results:** Forty-seven Italian Olympic athletes were enrolled: 83% asymptomatic, 13% mildly asymptomatic, 4% had pneumonia. The evaluation was performed after a median of 9 days from negative SARS-CoV-2 swab. Uncommon premature ventricular contractions (PVCs) were found in 13% athletes, however, only 6% (n=3) were newly detected. All newly diagnosed uncommon PVCs were detected by CPET. One of these three athletes had evidence for acute myocarditis by CMR, along with Troponin raise; another had mild pericardial effusion. No one of the remaining athletes had abnormalities detected by CMR (Figure).

**Conclusions:** Cardiac abnormalities in Olympic athletes screened after COVID-19 resolution were detected in a minority and were associated with new ventricular arrhythmias. Only one had evidence for acute myocarditis (in presence of symptoms and elevated biomarkers). No one of the remaining athletes had abnormalities by imaging or laboratory test. Our data support the efficacy of the clinical assessment including exercise-ECG to raise suspicion for cardiovascular abnormalities after COVID-19. Instead, the routine use of CMR as a screening tool appears not justified.

