



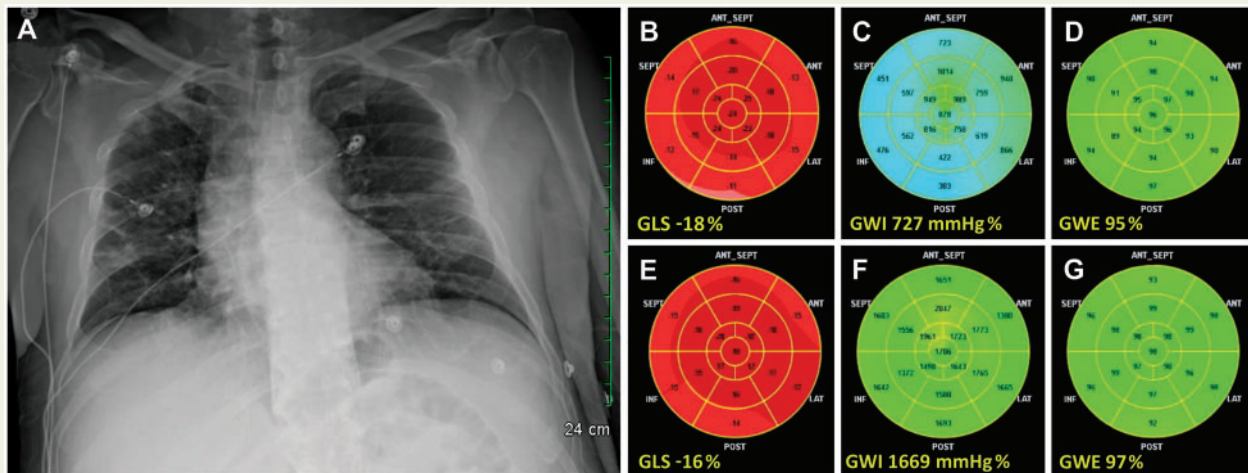


Myocardial work index: a glimmer of hope in COVID-19

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A 57-year-old man with no medical history presented to an outside hospital with the chief complaint of shortness of breath and cough. The patient tested positive for coronavirus disease 2019 (COVID-19). He presented to our institution 1 day later, and work-up included a chest X-ray that revealed patchy opacities in the bilateral mid to lower lung fields (Panel A) consistent with the recent diagnosis of COVID-19. He underwent transthoracic echocardiography to assess for COVID-19-related myocardial dysfunction. He was in normal sinus rhythm, and cuff blood pressure (BP) at the time of examination was 106/76 mmHg. Left ventricular ejection fraction (LVEF) was normal at 62% (Supplementary material online, Video S1), global longitudinal strain (GLS) was at the lower limits of normal at -18% (Panel B), global work index (GWI) was significantly reduced at 727 mmHg% (Panel C), and global work efficiency (GWE) was 95% (Panel D). The patient was discharged home and was symptom free at the 1-month follow-up. Cuff BP was 133/90 mmHg, and repeat echocardiography demonstrated a stable LVEF (Supplementary material online, Video S2), GLS (Panel E), and a significantly improved GWI of 1669 mmHg% (Panel F). GWE also remained relatively unchanged (Panel G). A difference in systolic BP of 27 mmHg between the two examinations is not enough to account for the drastic improvement in GWI. With no known underlying comorbidities contributing to the reduced GWI, we can hypothesize that myocardial work sets the stage as an even earlier indicator of COVID-19-induced myocardial dysfunction than reduced GLS and LVEF.

Supplementary material is available at *European Heart Journal – Cardiovascular Imaging* online.

Conflict of interest: none declared.