Women with long COVID may be at greater risk of developing high blood pressure

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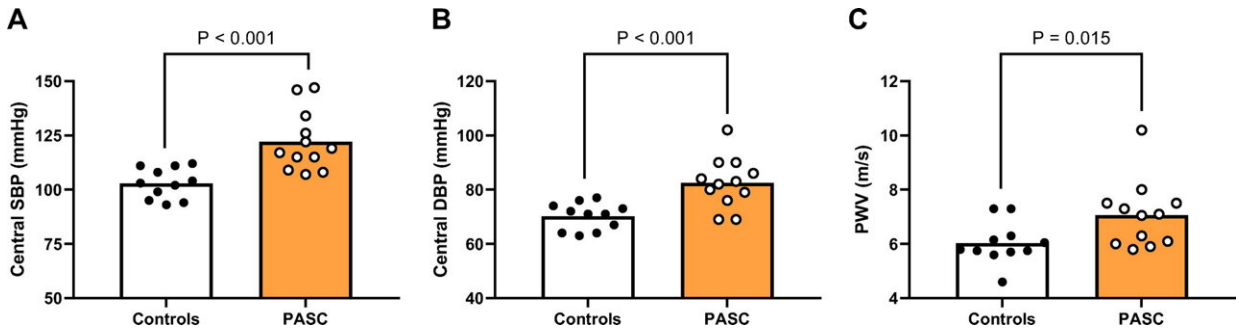

Group mean and individual data for central systolic blood pressure (SBP, A), diastolic BP (DBP, B), and carotid-femoral pulse wave velocity (PWV, C) between controls (white bars and ●; n = 11 females) and patients with postacute sequelae of coronavirus disease 2019 (COVID-19; PASC, orange bars and ○; n = 12 females). Comparisons between groups were made using Student's t test for independent samples (central SBP and DBP) and Mann–Whitney U test (PWV). Credit: *American Journal of Physiology-Heart and Circulatory Physiology* (2023). DOI: 10.1152/ajpheart.00018.2023

Post-acute sequelae of COVID-19 (PASC), colloquially referred to as long COVID-19 or long COVID, is when someone recovers from acute COVID-19 but shows a cluster of symptoms for months afterward. New research sheds light on the effects of long COVID on the cardiovascular system. The study is published in the *American Journal of Physiology-Heart and Circulatory Physiology*.

Between 10% and 20% of people who develop COVID-19 experience some symptoms of long COVID, such as fatigue, brain fog and shortness of breath. Long COVID is more prevalent in women.

In the current study, researchers collected a variety of detailed cardiovascular measures from 12 women with long COVID and 11 healthy women (controls) matched for age, height, weight and body mass index. In addition, the long COVID participants answered a questionnaire about the nature and severity of their ongoing symptoms.

The vascular function measures made in the limbs and brain of the two groups did not differ significantly. However, the long COVID group had significantly higher resting blood pressure when measured from the arm while lying quietly, and also higher central arterial stiffness. However, the severity of blood pressure elevation and arterial stiffness did not correlate to the severity of symptoms long COVID participants reported in the questionnaire.

The researchers noted that while only one participant with long COVID had been diagnosed with hypertension prior to contracting COVID-19, "two patients had received a new diagnosis of hypertension post-COVID-19, two had resting [blood pressure] values classified as Stage II hypertension, one as Stage I hypertension and two with high [blood pressure] based on the current guidelines." The elevation in resting blood pressure was consistent.

Conversely, though 11 of the 12 people in the long COVID group reported experiencing brain fog, they did not show signs of cerebral vascular dysfunction—indicating that the cause of that common symptom lies elsewhere.

"It is possible that the greater prevalence of PASC could worsen the already existing higher burden of hypertension in older females," warn

researchers.

More information: Damsara Nandadeva et al, Cardiovascular and cerebral vascular health in females with postacute sequelae of COVID-19, *American Journal of Physiology-Heart and Circulatory Physiology* (2023). DOI: 10.1152/ajpheart.00018.2023

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