33.3 - Secondary Prevention

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Long-term cardiovascular health and physical functioning of non-hospitalised ex-COVID-19 patients: a case-control study

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Funding Acknowledgements: Type of funding sources: Foundation. Main funding source(s): Dutch Heart Foundation (Nederlandse Hartstichting)

Background/Introduction: SARS-CoV-2 and the associated coronavirus disease 2019 (COVID-19) has substantial acute effects on cardiovascular health and physical functioning, but the long-term effects are less clear, especially in individuals that recover from COVID-19 at home, representing ~95% of all cases.

Purpose: We compared cardiovascular health and physical functioning of non-hospitalised ex-COVID-19 patients versus age- and sex-matched healthy peers.

Methods: We recruited non-hospitalised adults with PCR-proven COVID-19 and age- and sex-matched controls for this case-control study. Duration of COVID-19 illness and presence of residual complaints were inquired. Cardiovascular health status and physical functioning were assessed through a series of measurements: blood pressure, blood biomarkers (NT-proBNP, high-sensitive cardiac troponin I, C-reactive protein), carotid-femoral pulse wave velocity (ARTSENS), handgrip strength, 4-metre gait speed, habitual physical activity (days per week with at least 30 minutes of moderate physical activity) and quality of life based on the 12-item short form.

Results: We included 101 ex-COVID-19 patients (median age 59.0 [54.5-65.5], 59 (58.4%) male) at a median of 5.0 [4.0-7.0] months post-infection and 101 age- and sex-matched controls (median age 58.0 [54.0-64.5], 58 (57.4%) male). Median duration of COVID-19 illness was 8.0 days [6.0-14.0] and 32.3% of the cases reported residual complaints at the time of inclusion. We found no differences between ex-COVID-19 patients and controls in blood pressure (134-81 vs. 133-81 mmHg, p=0.40 and p=0.30 for systolic and diastolic pressures respectively), concentrations of NT-proBNP (8.50 vs. 7.00 pmol/L, p=0.22), high-sensitive cardiac troponin I (4.11 vs. 3.38 ng/L, p=0.06), C-reactive protein (4.00 vs. 4.00 mg/L, p=0.93) and carotid-femoral pulse wave velocity (6.63 vs. 7.01 m/s, p=0.30). Ex-COVID-19 patients showed higher handgrip strength compared to controls (43 kg vs. 38 kg, p=0.004), but 4-metre gait speed (2.62 vs. 2.56 s, p=0.33), habitual physical activity levels (6.0 vs. 6.0 days, p=0.16) and reported quality of life (86.4% vs. 88.6%, p=0.10) were not different between groups.

Conclusion(s): Cardiovascular health and physical functioning parameters were not different between non-hospitalised ex-COVID-19 patients and age- and sex-matched controls at five months post-infection. This suggests that individuals who recovered from COVID-19 at home do not have an increased cardiovascular risk or impaired physical functioning in the long-term.