

Cardiovascular Autonomic Dysfunction In Post Covid Patients Evaluated by Sustain Handgrip Test

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Abstract

Background: This study was performed to evaluate the cardiovascular autonomic function in Covid and non-Covid patients by using sustained hand grip test. Covid 19 primarily involves lungs by causing pneumonia but may also involve other organs. Pneumonia is interstitial pneumonia as it is viral origin. The patient commonly presents with fever, dry cough, fatigue. SARS-COV 19 virus in pandemic of Covid -19 not only shows ill effect in acute phase but symptoms may persist or delayed symptom beyond 4 weeks of acute infection called as "long Covid or post Covid syndrome". The symptoms of Persistent Long Covid syndrome consist of cough, dyspnea, fatigue, palpitation, headache, insomnia, etc. Along with neurological abnormalities involvement of ANS is not uncommon. **Methods:** 27 RT-PCR confirmed COVID-19 recovered patients and 27 healthy subjects in age group between 18 to 60 were enrolled in the study. This is a type of cross-sectional study. Sustained hand grip test was performed on the subjects. The subject is asked to sit comfortably, and ECG and sphygmomanometer are connected. Baseline heart rate and B.P. are recorded. Ask the subject to maintain pressure of 30% of maximum activity for 5 minutes. Record heart rate and B.P. change. The diastolic blood pressure response to isometric exercise was calculated as the difference between diastolic blood pressure after a 4-min hand grip at 30% of maximal effort and diastolic blood pressure at rest. **Results:** In Sustain hand grip test (HGBP) in cases 66.7 % (18) were in normal range (≥ 16), 3.7% (1) was borderline (11-15) whereas 29.6% (8) were abnormal (< 10). For control 96.3% (26) were in normal range while 3.7% (1) was abnormal. The mean Sustain hand grip test (HGBP) of cases was 15.4 ± 5.4 and that of control was 19.2 ± 5.1 . When unpaired t-test was applied, statistically there was significant difference between two groups. **Conclusion:** The present study thereby shows that Covid 19 infection may present with cardiovascular autonomic dysfunction. The CVS autonomic dysfunction leads to changes in heart rate and blood pressure. Blood pressure and heart rate study are important to identify cardiovascular autonomic dysfunction. Sustain hand grip test may be used to evaluate the cardiovascular autonomic dysfunction with fair accuracy.