

# Comparison of Total Heart Volume and Laboratory Results in COVID-19 Infection

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## Abstract

**Introduction:** In this study, we aimed to investigate cardiac involvement in patients diagnosed with the new Coronavirus Disease 2019 (COVID-19). **Materials and Methods:** Patients diagnosed with COVID-19 pneumonia in the emergency department were included in this retrospective study. Patients diagnosed with COVID-19 pneumonia were included in Group 1 and healthy individuals (as control group) were included in Group 2. CCT images were transferred to the Intrasure Myrian® software. Total cardiac volume (TCV) was measured in three-dimensional images. Obtained parameters were compared between groups **Results:** Total cardiac volume was  $525.35 \pm 29.96$  cm<sup>3</sup> (min:244cm<sup>3</sup> - max:1545cm<sup>3</sup>) in Group 1 and  $369.64 \pm 10.41$ cm<sup>3</sup> (min:229cm<sup>3</sup> - max:522cm<sup>3</sup>) in Group 2 ( $P=0.000$ ). In Group 1 patients, levels of D-dimer, C-reactive protein (CRP) and high sensitivity troponin I (hs-TnI) were 391.00 (6.00-6450) µg/L, 3.50 (0.10-30.40) mg/dL and 4.41 (1.00-3627.00) ng/mL, respectively, whereas those in Group 2 were 112.50 (3.00-767.00) µg/L, 0.20 (0.10-19.30) mg/dL and 2.50 (2.30-36.02) ng/mL, respectively ( $P<0.05$ ). **Conclusion:** Total cardiac volume increases in patients that develop pneumonia due to COVID-19 infection. D-dimer, CRP and hs-TnI levels also increase with TCV. **Keywords:** COVID-19, chest computed tomography, total cardiac volume, C-reactive protein, D-dimer, high sensitive troponin I

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