

and 4 hours post-injection of 370 MBq ^{123}I -mIBG. For quantification of results, a circular region of interest (ROI) was placed over the heart and mediastinum to calculate late (4-hour) heart-to-mediastinum ratios (HMR), a method commonly employed in clinical settings.

Results: Increased cardiac sympathetic activity as indicated by decreased late HMR (mean HMR 1.8 ± 0.22), was observed in 67.7% of the patients (23/33, 95% CI 0.54 - 0.854). At 6-8 months follow-up, cardiac sympathetic innervation abnormalities were still present in 70.4% of the patients (19/27, 95% CI 0.532 - 0.876), with a mean late HMR of 1.74 ± 0.27 . Additionally, 9 of the patients showing an initial abnormal sympathetic innervation underwent follow up 12 - 15 months post-diagnosis. All were found to have persistently abnormal HMRs. Left ventricular ejection fraction (LVEF) and cardiac enzyme levels remained normal in all cases during both the initial diagnosis and follow-up periods, with no significant correlation identified between LVEF, nt-pro-BNP or troponin levels and HMR. **Conclusion:** Persistent increased cardiac sympathetic activity is observed in COVID-19 patients without any prior cardiac disease. Further follow-up is necessary to investigate potential long-term consequences, such as COVID-induced heart failure.

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Long-term cardiac risk in recovered Covid-19 patients evaluated by ^{123}I -mIBG

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Aim/Introduction: COVID-19 patients without underlying heart disease can develop heart failure, myocarditis or cardiac arrhythmias. Significant cardiac involvement seems to occur independent from the severity of the initial disease pattern and may persist during the long-term recovery period. To evaluate the presence of cardiac sympathetic nervous dysfunction in such patients, non-invasive imaging using the radiotracer ^{123}I -metaiodobenzylguanidine (mIBG), a norepinephrine analogue, was performed in COVID-19 patients without pre-existing cardiac conditions. **Materials and Methods:** 33 recovered COVID-19 patients (14 men and 19 women; aged 21 - 66 years) without any known severe cardiac, renal, neurological or metabolic diseases underwent ^{123}I -mIBG -SPECT/CT and echocardiography as well as serum measurement of cardiac enzymes, renal retention parameters and electrolytes 0 to 3 months after recovery. In 82% of these patients (27/33), follow-up was performed 6 to 8 months after diagnosis, nine patients (27%) underwent additional imaging after 12 to 15 months. SPECT/CT scans were acquired 15 minutes