

| Research Article |

ANALYSIS OF CLINICAL AND FUNCTIONAL STATUS IN PATIENTS WITH CHRONIC HEART FAILURE FOLLOWING COVID-19 INFECTION

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Objective. This study aimed to analyze echocardiographic, hemodynamic, and functional changes in patients with chronic heart failure (CHF) who had recovered from COVID-19 compared to those who had not. Additionally, we assessed clinical status, quality of life, and key factors influencing disease progression and treatment outcomes.

Materials and Methods. A total of 103 patients aged over 60 with CHF were enrolled in the study. Based on medical history, they were divided into two groups: Group 1 (n=52): CHF patients with a history of COVID-19 infection. Group 2 (n=51): CHF patients without prior COVID-19 infection. The study was conducted at City Clinical Hospital No. 7 in Tashkent. Patients were monitored for one year, with assessments including: Echocardiography (ECHO) for evaluation of left ventricular systolic and diastolic function, ejection fraction (EF), total systolic volume (TSV), and total diastolic volume (TDV). Hemodynamic assessment with measurement of systolic blood pressure (SBP) and diastolic blood pressure (DBP). 6-minute walk test (6MWT) for exercise tolerance. Blood tests for analysis of lipid profile and glucose levels. Clinical observations, including frequency of outpatient visits, hospitalizations, and mortality rates. Statistical analysis was performed, with a significance level of $p < 0.05$ considered statistically significant.

Results. Data from 101 patients were analyzed (two were lost to follow-up). The findings were as follows: Mortality rate was 3%, with four patients dying during follow-up. Three deaths occurred in Group 1 (6%) and one in Group 2 (2%). Hospitalizations were more frequent in Group 1 (13%) than in Group 2 (8%) ($p < 0.05$). Outpatient visits were significantly higher in Group 1 (18%) compared to Group 2 (4%) ($p < 0.01$). Hemodynamic changes indicated an increase in SBP and DBP in Group 1, whereas Group 2 showed positive trends. Heart rate (HR) increased by 20% in Group 1 ($p < 0.05$) and decreased by 4.2% in Group 2. Functional capacity (6MWT) in Group 1 was reduced, whereas Group 2 demonstrated a 19.8% improvement ($p < 0.05$) and a 33.7% higher score compared to Group 1 ($p < 0.01$). Lipid profile analysis showed a higher prevalence of dyslipidemia in Group 1 (20.4%) than in Group 2 (10%).

Conclusion. This study revealed that patients with CHF who had experienced COVID-19 exhibited significant deterioration in left ventricular systolic and diastolic functions. Group 1 showed a notable decline in ejection fraction, increased total systolic and diastolic volumes, and worsened hemodynamic parameters. Additionally, these patients had higher hospitalization rates, increased outpatient visits, and lower quality of life. The findings indicate that COVID-19 negatively impacts CHF progression, emphasizing the need for close monitoring, personalized treatment strategies, and comprehensive rehabilitation programs for affected patients.