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Evaluation and Clinical Correlation of Dyspnea Scales in Patients with Isolated Heart Failure Who Present to Emergency Department with Dyspnea

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In this study, we aimed to evaluate dyspnea severity by dyspnea scales at admission and after standard heart failure (HF) treatment and its impact on decisions about hospitalization and discharge in patients with isolated HF who presented to emergency department with dyspnea. This study prospectively included a total of 114 patients older than 18 years who were diagnosed with isolated systolic HF with an ejection fraction of <40% after presenting with dyspnea to Mersin University Research and Application Hospital's Emergency Department.

Dypsnea severity was mostly reduced after treatment at emergency department when assessed with each of Likert scale, visual analog scale (VAS), and numeric rating scale (NRS). The scales were positively correlated with one another between 0th and 4th hours, and this correlation was valid for both hospitalized and discharged patients. While there occurred significant increases in finger tip oxygen saturation, troponin, NT-pro-BNP, partial oxygen pressure, oxygen saturation, pH, and base deficit at 4th hour compared to baseline, significant drops were observed in respiratory rate, systolic blood pressure, diastolic blood pressure, and heart rate. VAS and NRS levels at fourth hour were significantly greater in hospitalized patients than the discharged ones. In all three dyspnea scales the fourth hour measurements were lower in both hospitalized and discharged patients. Seventy-four percent of patients whose dyspnea improved according to dyspnea scales were discharged. The likelihood of dyspnea not being improved was 2 times greater in the hospitalized ones compared to the discharged ones.

In patients with HF who present to emergency department with dyspnea, dyspnea scales are consistent with an improvement in dyspnea and clinical status, although this improvement was not correlated to an expected drop in NT-proBNP in the acute setting. However, dyspnea scales and an improvement in dyspnea should not be used alone for decisions about patients' hospitalization or discharge.

Keywords: Dyspnea scales, heart failure, proBNP