

Effect of sacubitril/valsartan on heart rate variability parameters in patients with heart failure with reduced ejection fraction

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Introduction: Sacubitril/valsartan (S/V) is a treatment for heart failure with reduced ejection fraction (HFrEF), which impressively impact cardiovascular prognosis by reducing major adverse cardiovascular events such as cardiovascular mortality and sudden death but the precise mechanism underlying the beneficial effect on reducing cardiovascular mortality is still not clear. S/V blocks harmful effects of renin-angiotensin-aldosterone system activation and raising levels of natriuretic peptides that are degraded by neprilysin. S/V can have among patients living with HFrEF by improving imbalance in the cardiac autonomic nervous system (CANS). Data from an international investigation show the benefits that this imbalance has been linked to mortality in HFrEF, noted the study authors.¹⁻⁴ The present study aims to assess effects of S/V on heart rate variability parameters (HRV) in symptomatic patients with HFrEF.

Patients and Methods: Patients diagnosed as a HFrEF with left ventricular ejection fraction (LVEF) < 40%. 24 patients with HFrEF according to NYHA II-IV classification who aged 49 to 82 years were enrolled in the study. HRV parameters SDNN (standard deviation of normal-to-normal intervals) and RMSSD (mean square of differences between consecutive R-R intervals) were reordered before starting S/V and after one two months of the therapy. S/V treatment increased SDNN (67.22±17.7 ms vs. 88.81±16.5 ms, P < 0.05) and RMSSD (31.52±12.4 ms vs. 42.9±16.1 ms) in the study participants.

Conclusion: In our study we concluded also that LVEF improved, and plasma N-terminal-pro hormone brain natriuretic peptide fell in accordance with HRV changes.

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