











Chloride - a neglected but very important electrolyte in the era of sodium-glucose co-transporter 2 inhibitors

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Introduction: Hypochloremia is a common finding in patients with heart failure (HF) and is often associated with drug therapy, primarily the use of diuretics. In the last few years, several studies have established that serum chloride levels are a very powerful prognosis predictors in both acute and chronic HF. Considering that sodium-glucose co-transporter 2 inhibitors (SGLT2i) are the only medications proven to be effective in the treatment of HF in the complete spectrum of left-ventricular ejection fraction (LVEF), we conducted a research to evaluate the impact of SGLT2i on serum chloride levels during follow-up in patients with HF.

Patients and Methods: This was a prospective observational study, conducted at Dubrava University Hospital and involving patients with HF, recruited from the local HF registry. We included 241 participants between May 2021 and April 2023. All data were obtained before the introduction of SGLT2i and at 6 and 12 months follow-up. The primary outcome was changes in chloride concentration during the follow-up time. The secondary outcome was the correlation between chloride concentrations and N-terminal Pro-Brain Natriuretic Peptide (NT-proBNP) values, the functional status of the patient and interdependence of NT-proBNP levels and other measured patient-specific parameters.

Results: Results show that SGLT2i significantly increase the chloride concentration at 6 and 12 months of follow-up. Higher chloride concentration is an independent predictor of lower NT-proBNP levels and correlates with better functional status of the patient according to the New York Heart Association (NYHA) classification. Furthermore, higher body mass index at the baseline is an independent predictor of lower NT-proBNP levels at both 6 and 12 months. Age influenced NT-proBNP levels positively at both time points, and smoking only at 12 months. Gender did not affect NT-proBNP levels.

Conclusion: There is increasing evidence that serum chloride is a very important prognostic marker in patients with HF.^{1,2} Given that SGLT2i have become a mandatory part of the treatment of patients with HF and the fact that in this study we have shown the influence of SGLT2i on chloride values, the determination of serum chloride values should certainly become part of the routine follow-up in patients with HF.

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LITERATURE

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