

The effect of SGLT2 inhibitors on serum electrolyte levels, kidney function and NT-proBNP in patients with heart failure with preserved and reduced ejection fraction

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Introduction: Sodium-glucose cotransporter 2 inhibitors (SGLT2i) have become the cornerstone of heart failure (HF) therapy across the ejection fraction (EF) spectrum, with plethora of metabolic effects^{1,2}. Knowledge on effects of SGLT2i on electrolyte levels and kidney function in patients with preserved (HFpEF) and reduced HF (HFREF) is still limited.

TABLE 1. Participants' characteristics (N=1018).

	HFpEF group (N=125)	HFREF group (N=893)	P-value*
Age	73 (72.0-74.94)	69 (68-70)	0.0004
Sex			
Male	56 (52.5%)	626 (70.01%)	
Female	69 (47.5%)	267 (29.9%)*	
Body mass index (kg/m ²)	30.44 (28.92-31.37)	28.67 (27.96-29.16)	0.0074
NT-proBNP at admission (pg/L)	1615.5 (1098.43-2020-84)	2667 (2413.96-3083.03)	<0.0001
NT-proBNP at 6 months (pg/L)	712 (610.27-1085.1)	938 (862.73-1001.57)	0.0981
NT-proBNP at 12 months (pg/L)	590 (420.94-939.67)	689 (639.71-757.59)	0.6358
eGFR at admission (45mL/min/1.73m ²)	65.09 (60.31-69.7)	66 (63.89-67.85)	0.4071
eGFR at 6 months (45mL/min/1.73m ²)	66.2 (49.96-73.85)	65.4 (63-67.42)	0.1707
eGFR at 12 months (45mL/min/1.73m ²)	63.1 (48.22-77.01)	65.7 (61.23-68.8)	0.2103
Potassium at admission (mmol/L)	4.3 (4.2-4.4)	4.3 (4.3-4.4)	0.8729
Potassium at 6 months (mmol/L)	4.3 (3.96-4.73)	4.3 (4.3-4.4)	0.6646
Potassium at 12 months (mmol/L)	4.5 (4.2-4.61)	4.4 (4.4-4.6)	0.4323
Chloride at admission (mmol/L)	103 (102-103)	103 (102-103)	0.8178
Chloride at 6 months (mmol/L)	102 (101-103)	103 (102-103)	0.400
Chloride at 12 months (mmol/L)	104 (103-104)	103 (103-103)	0.4078
Hematocrit at admission	0.3975 (0.3907-0.4056)	0.411 (0.407-0.415)	0.1042
Hematocrit at 6 months	0.4050 (0.3905-0.4239)	0.426 (0.421-0.0431)	0.0171
Hematocrit at 12 months	0.4265 (0.4010-0.4430)	0.4310 (0.4260-0.4377)	0.3972

* Mann-Whitney test, # Chi square test, p<0.0001

HFREF = heart failure with reduced ejection fraction, HFpEF = heart failure with preserved ejection fraction, NT-proBNP = N-terminal prohormone of brain natriuretic peptide, eGFR = estimated glomerular filtration rate

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