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Efficacy and safety evaluation of sacubactril/valsartan in the treatment of hemodialysis patients with heart failure

Ying Lei, Yanyan Su, JinYan Tong, Yuquan Wang, Yunfang Zhang

Department of Internal Medicine-Nephrology, Peoples Hospital of Huadu District Guangzhou China., China

Objectives : To evaluate the efficacy and side effects of sacubactril valsartan in the treatment of hemodialysis patients with heart failure.

Methods : We selected maintenance hemodialysis (MHD) patients with heart failure enrolled in the dialysis center from December 1, 2020 to December 1, 2022, which were treated with oral sacubactril /valsartan for 6 months, during which the biomarkers and biochemical indicators of heart failure were monitored, and the heart structure and function were evaluated by echocardiography. The changes of blood pressure, cardiac function grade (NYHA), left ventricular ejection fraction (LVEF), left ventricular end-diastolic inner diameter (LVDD), left ventricular posterior wall thickness (LVPW), Interventricular septal thickness(IVS),atrial brain natriuretic peptide (BNP), troponin I (cTnI), and blood potassium (K) were collected before and after treatment.

Results : Blood pressure, cardiac function grade, LVEF and BNP were significantly improved after 6 months of treatment (P<0.05), while LVDD, LVPW and IVS and blood potassium was not significantly changed (P>0.05). Patients with heart failure were divided into two groups according to EF value: decreased ejection fraction group (EF≤50%) and normal ejection fraction group (EF > 50%). In patients with EF≤50%, sakuba/trivalsartan can significantly increase EF value, reduce blood pressure, BNP value, improve cardiac function, and increase blood potassium (P=0.037). However, in the patients with EF value > 50%, the change of EF was not obvious, but also had the effect of lowering blood pressure, and the decrease of BNP value and the increase of blood potassium were not obvious (P > 0.05).

Conclusions : Sackubactril/valsartan can improve cardiac systolic function and cardiac function classification in hemodialysis patients, and can reduce blood pressure in patients with high safety, and can significantly improve the quality of life of dialysis patients with heart failure.

table1.png

Variable	BNP (pg/ml)	PTH (pmol/L)	cTnI (ng/ml)	K (mmol/L)	Ca (mmol/L)	P (mmol/L)	Systolic blood pressure (mmHg)	Diastolic blood pressure (mmHg)
Pre-treatment	2023.14±1888.67	28.99±36.48	5.08±4.47	4.44±1.05	2.82±3.72	1.82±0.66	154.97±17.55	95.19±12.34
Post-treatment	1129.94±1620.73	33.66±34.13	0.69±3.99	4.81±1.10	2.48±1.67	1.86±0.64	134.5±14.92	86.28±8.98
P-value	0.006	0.162	0.340	0.057	0.326	0.704	0.000	0.000

Variable	LVDD (mm)	IVS (mm)	LVPW (mm)	LVEF (%)
Pre-treatment	52.00±8.76	12.67±3.18	11.89±2.88	52.58±14.10
Post-treatment	50.14±8.93	12.53±2.59	11.39±2.21	59.31±12.10
P-value	0.071	0.731	0.217	0.001

Table1.Comparison of hemodialysis patients before and after treatment with sakubactril/valsartan[x±s]

table1.png

Variable	EF≤50%				EF>50%			
	EF(%)	Systolic blood pressure (mmHg)	Diastolic blood pressure (mmHg)	K (mmol/L)	EF (%)	Systolic blood pressure (mmHg)	Diastolic blood pressure (mmHg)	K (mmol/L)
Pre-treatment	39.71±7.60	151.9±18.86	97.65±13.95	4.41±1.28	64.11±6.23	157.68±16.3	93±10.6	4.47±0.84
Post-treatment	53.71±13.05	129.94±15.26	87.65±7.79	5.0±1.23	64.32±8.78	138.58±13.7	85.05±9.97	4.63±0.76
P-value	0.000	0.000	0.008	0.037	0.917	0.000	0.017	0.546

Variable	EF≤50%	EF>50%
	BNP (pg/ml)	BNP (pg/ml)
Pre-treatment	1643.16±1879.77	2442.82±1865.89
Post-treatment	926.16±1369.44	1375.71±1879.64
P-value	0.126	0.021

Table2. Comparison of hemodialysis patients before and after treatment with sakubatriil/valsartan according to the EF value[x±s]