

# INFLUENCE OF INTERDIALYTIC WEIGHT GAIN AND ULTRAFILTRATION RATE ON BLOOD PRESSURE IN MAINTENANCE HEMODIALYSIS PATIENTS IN DIALYSIS CENTRES IN DALMATIA COUNTY IN SOUTHERN CROATIA

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**OBJECTIVE:** Hypertension is very poorly controlled in patients on haemodialysis (HD) and hypertension is predictor of cardiovascular mortality in HD patients. Patients with thrice-weekly HD have higher predialysis weights (PWG) and ultrafiltration rates (UF) on the first compared with subsequent HD of the week. We hypothesized that these variations in PWG and UF are associated with a systematic difference in blood pressure. The aim of this study was to examine mean arterial pressure (MAP) and pulse pressure (PP) in HD patients and to assess the relationships between these parameters and PWG and UF.

**DESIGN AND METHODS:** In this study 402 patients (aged 68.3±13.8 years) on maintained HD (4.73±5.17 years) were included (232 males, 170 females) in Dalmatian centres in Dalmatia county in Southern Croatia. Blood pressure measurement was undertaken at the first HD session on the beginning of the observed week. For every single observed HD mean arterial pressure (MAP) calculated as ((systolic + 2 diastolic blood pressure)/3) (mmHg) and pulse pressure (PP) computed as (systolic - diastolic blood pressure) (mmHg) predialysis and postdialysis were measured. Therefore, PWG and UF rate were calculated as average value during 4 weeks (12 HD treatments) prior to study.

**RESULTS:** These results showed influence of PWG and UF on blood pressure in HD patients. There were statistically significant correlation between average PWG and post HD MAP value (r = -0.131, p=0.004) indicating that higher PWG lead to hemodynamic instability and lower blood pressure in HD patients after HD treatment. Also, higher UF rate was significantly correlated with lower MAP and PP before and after HD treatment as shown in Table 1.

**CONCLUSIONS:** Restriction in PWG and controlling UF rate during HD session is important because these two parameters might influence blood pressure parameters in HD patients. It is well known that poor blood pressure control in HD patients leads to increased cardiovascular morbidity and mortality, so further research should evaluate improvement of blood pressure parameters and hemodynamic stability in these patients by PWG restriction and lower UF rate.

	Average interdialytic weight gain (kg)		Average ultrafiltration rate per haemodialysis (L)	
	Correlation Coefficient	P	Correlation Coefficient	P
MAP pre HD (mmHg)	0.052	0.150	-0.005	0.461
PP pre HD (mmHg)	0.075	0.067	-0.019	0.351
MAP post HD (mmHg)	-0.131	0.004*	-0.131	0.004*
PP post HD (mmHg)	-0.077	0.061	-0.157	0.001*

**Table 1.** Correlation between blood pressure and average interdialytic weight gain and average ultrafiltration rate per haemodialysis treatment (Person's correlation coefficient, one-tailed significance level), significant correlation are marked

