Ultrafiltration Volume is Associated with Changes in Blood Pressure in Chronically Hemodialyzed Patients

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Kovacic et al: Ultrafiltration Volume is Associated with Changes in Blood Pressure in Chronically Hemodialyzed Patients. Introduction: Volume overload is a main factor in development of hypertension in hemodialysis patients. In order to demonstrate impact of ultrafiltration volume on blood pressure during 15-month period in a group of patients undergoing chronic hemodialysis therapy, we conducted this study. We hypothesized that ultrafiltration volume different affects the pre/postdialysis systolic pressure, diastolic pressure, mean arterial pressure (MAP) and pulse pressure (PP) values. Subjects and Methods: Study subjects were 23 anuric chronically hemodialyzed patients. The overall study time was 15 months, and 136 single hemodialysis treatments were analyzed. Results: Ultrafiltration was negatively correlated with predialysis systolic blood pressure (r=-0.169, p=0.025), postdialysis systolic blood pressure (r=-0.292, p<0.001), postdialysis MAP (r=-0.186, p=0.015), predialysis PP (r=-0.290, p<0.001), and postdialysis PP (r=-0.370, p<0.001). Ultrafiltration/dry body mass (UF/W) ratio was negatively correlated with predialysis PP (r=-0.222, p=0.005), postdialysis PP (r=-0.340, p<0.001), and postdialysis systolic blood pressure (r=-0.243, p=0.002). We found significant difference in postdialysis PP between dialyses with UF/W ratio <= 0.05 and dialyses with UF/W ratio >0.05 (63.49±20.76 vs. 56.27±16.33 mmHg, p=0.033). Conclusion: The ultrafiltration volume strongly affects postdialysis PP values. Evaluation of elevated blood pressure treatment in patients undergoing chronic hemodialysis therapy must be consider in respect of postdialysis PP values, not just depending on pre/postdialysis systolic and diastolic pressure or MAP values. (J HK Coll Cardiol 2003;11:11-15)

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