

PULSE PRESSURE AND CARDIOVASCULAR CALCIFICATION IN HEMODIALYSIS PATIENTS

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- **Introduction.** Cardiovascular calcifications are an important risk factor for cardiovascular events in patients on dialysis. Pulse pressure also appears to be a stronger independent predictor of morbidity and mortality than other blood pressure (BP) parameters such as systolic, diastolic, and mean arterial BP among hemodialysis patients. The use of simple and inexpensive methods to evaluate cardiovascular calcifications is preferred. The aim of this study was to evaluate the relationship of pulse pressure parameter with aortic and mitral valve calcification, and abdominal aortic calcification in HD patients.
- **Methods.** We performed a cross-sectional study in 85 stable patients treated with HD for more than 6 months. Patients were 49.9 ± 12.4 years of age, 58% males, 17% diabetics and the mean dialysis vintage was 51.5 ± 28.7 months. Demographic and biochemical data were examined. Blood pressure was measured with the patient in the seated position using a mercury sphygmomanometer. The mean of three consecutive readings, taken 1 min apart, was recorded. Plain X-ray images of lateral lumbar spine from all subjects were studied for calculation of semiquantitative vascular calcification scores as described by Kauppila. The severity of the anterior and posterior aortic wall calcification were graded individually on a 0-3 scale for each lumbar segment and the results were summarized to develop a score (range 0-24). Echocardiograms were examined for absence or presence of calcification of the mitral and aortic valve.
- **Results.** Mean pulse pressure of study population was 55.72 ± 14.32 mmHg. Fifty nine patients (69.4%) were identified with aortic abdominal calcification, and the mean Kauppila score was 4.91 ± 4.05 . Sixty patients (70.5%) had at least one valve calcified, while thirty three patients (38.8%) had both valves calcified. In univariate analysis every 1 mmHg increase of pulse pressure was associated with increased risk for cardiovascular calcification $p=0.020$. The association also remained strong in multivariate analysis, where every increase of 1 mm Hg in pulse pressure was associated with increased risk for cardiovascular calcification $p=0.038$.
- **Conclusion.** In our study pulse pressure strongly correlates with cardiovascular calcification. We must highly suspect the presence of cardiovascular calcification in hemodialysis patients with high pulse pressure.

