

FACTORS INFLUENCING ARTERIAL STIFFNESS IN HEMODIALYSIS PATIENTS AND KIDNEY TRANSPLANT RECIPIENTS

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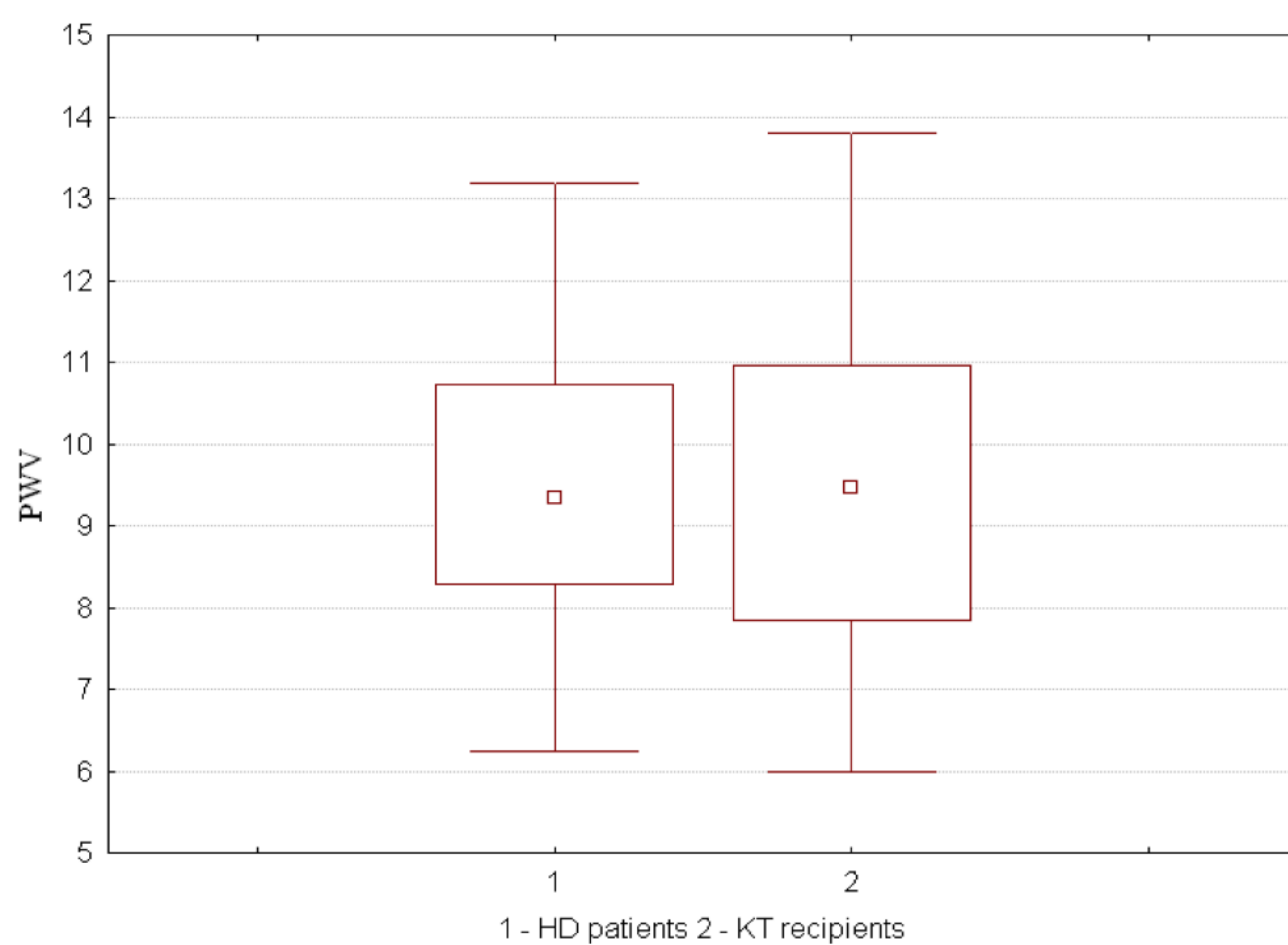
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OBJECTIVES

The identification of arterial stiffness as a cardiovascular risk factor associated with uremia and renal replacement therapy (RRT) has important prognostic value in patients with end stage renal disease (ESRD). Since, to date, every second patient of this group dies from cardiovascular events. So far, there is a limited number of studies on the elastic properties of the arteries in patients undergoing different types of RRT. This study was conducted to determine the factors influencing the arterial stiffness in patients on hemodialysis (HD) and kidney transplant (KT) recipients.

METHODS

The open prospective randomized study covered 75 ESRD patients (42M/33F; age 49 ± 14) receiving renal replacement therapy – 58 of them were on hemodialysis, 17 had a functioning kidney transplant. To assess arterial stiffness index PWV calculated by contour analysis of peripheral pulse wave recorded by fotopletizmografic instrument Pulse Trace PCA 2000 (MicroMedical Ltd., United Kingdom) was used.



RESULTS

Arterial stiffness wasn't different in the groups of examinees: PWV in the group of hemodialysis patients was 9.3 (8.2; 10.7) m/s, in the group of patients after kidney transplantation it was 9,3 ± 2,0 m/s (p = 0.887981). In conducting the correlation analysis in the group of hemodialysis patients no association was found between PWV and age of patients, duration of hemodialysis and hypertension, hemoglobin and total cholesterol levels. However, we revealed that PWV is a negative correlation of medium strength with body mass index (BMI) (r = -0,31, p = 0.016811). In the group of kidney transplant recipients correlation analysis showed that PWV correlated with the age of patients (r = 0,65; p = 0.004995) and total cholesterol level (r = 0,51; p = 0.0376330) and found no connection with duration of the RRT and hypertension, hemoglobin and creatinine levels.

CONCLUSIONS

We found no significant differences in the values of PWV in the group of hemodialysis patients and kidney transplant recipients. The low BMI of the dialysis patients turned out to be the factor determining the arterial stiffness. For kidney transplant recipients arterial stiffness is associated with traditional cardiovascular risk factors - such as age and total cholesterol.

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