PROGNOSTIC SIGNIFICANCE OF CT SCANS OF ABDOMINAL AORTA ON MORTALITY OF HEMODIALYSIS PATIENTS - THREE YEAR FOLLOW-UP

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INTRODUCTION AND AIMS: Vascular calcification (VC) is the major contributor to cardiovascular (CV) disease in hemodialysis (HD) patients and independent predictors of mortality. Various methods have been suggested for monitoring arterial calcification in HD patients, including computed tomography (CT) scans of the abdominal aorta. The aim of this study was to determine the prognostic significance of calcium scores of infra-renal segment of the abdominal aorta (AACS) on mortality of prevalent HD patients.

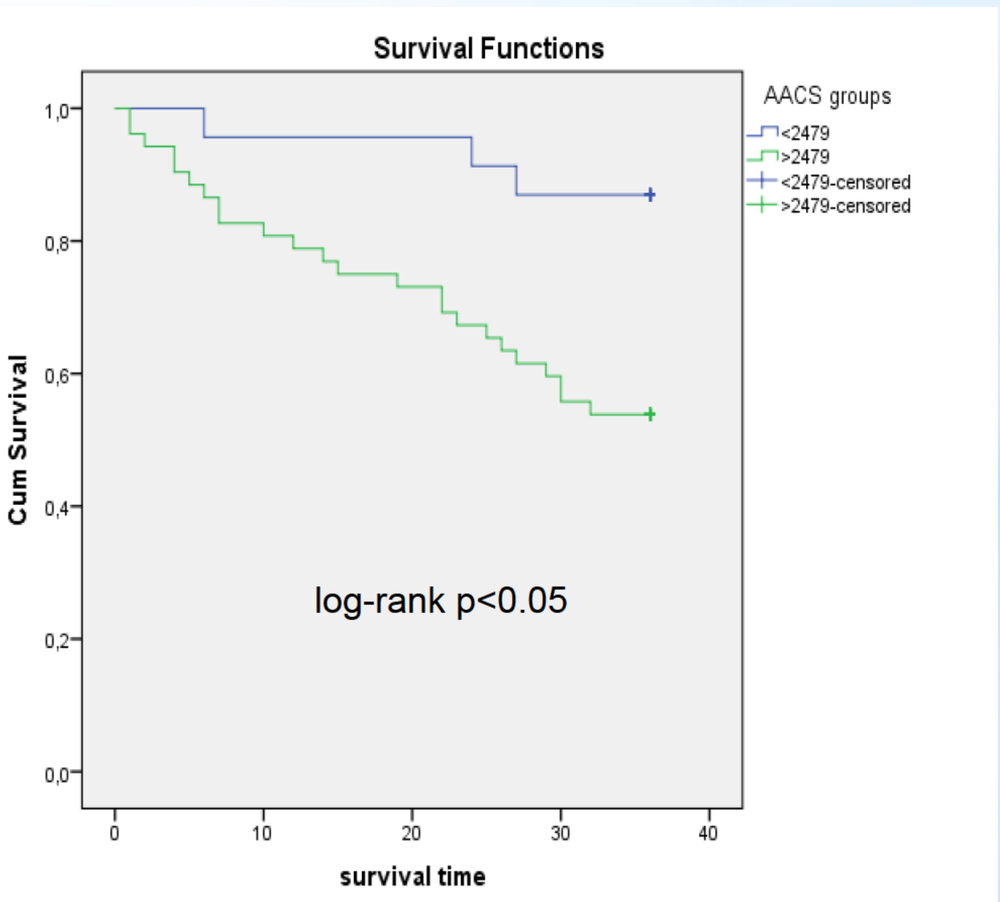
METHODS: AACS were determined by 16-slice CT in 75 consecutive patients treated with HD for more than six months and expressed in Agatston units (A.U.). Calcifications of aorta were not found only in two patients. In earlier report, we have shown by ROC curve analysis that cut-off score above which patients have an increased risk of death was AACS greater than 2479 A.U. (with sensitivity 89.5 % and specificity 38 %; p>0.05). Therefore, patients were divided into 2 groups: group I (AACS ≤ 2479 A.U.) and group II (AACS > 2479 A.U). We analyzed 36 months patients' survival.

RESULTS: Apart from differences in AACS, groups were homogeneous except for Kt/V, phosphorus (P) and CRP levels (Table 1). During three-year follow-up period, 27 patients died (36 %), 3 from group I and 24 from group II.

Table 1.Patient's characteristics and biochemical parameters (mean ± SD)

	group I AACS ≤2479 A.U. n=23	group II AACS>2479 A.U. n=48	P
Age (years)	58 ±11	61±13	>0.05
Time on HD (m.)	101±66	104±75	>0.05
Hb(g/dL)	10.4±0.65	10.4±1.9	>0.05
BMI(kg/m^2)	24.1±3.3	25.1±4.3	>0.05
S.albumin(g/L)	39.3±2.5	37.6±5.9	>0.05
DM, yes (%)	4,3 %	14,3 %	>0.05
HTA, yes (%)	78.3	91.7	>0.05
CRP (mg/L)	**4.9±4.0**	**10.3±12.7**	**<0.05**
iPTH (pg/ml)	375±403	422±468	>0.05
Ca (mmol/L)	2.28±0.13	2.26±0.37	>0.05
P (mmol/L)	**1.35±0.35**	**1.63±0.36**	**<0.05**
Kt/V	**1.51±0.33**	**1.29±0.29**	**<0.05**

Figure 1.Kaplan-Meier survival curves



•According to Kaplan-Meier survival analysis the patients from group I had significantly better three-year survival compared with patients in group II (log-rank test p<0.05) (Figure 1). Cox proportional hazards model (after adjustment for Kt/V, CRP and P) showed that patients with lower AACS had a 70% RR reduction of mortality compared to patients with higher AACS from group II (HR 0.306; 95% CI 0.086 – 1.095; p=0.069), on the edge of statistical significance.

CONCLUSION: Screening of vascular calcification in the region of aorta (Agatston score) gives a good prediction of patient outcomes and it's a cost-effective method to identify patients at increased Mt risk.

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