

FETUIN-A LEVELS IN KIDNEY TRANSPLANT RECIPIENTS WITH CARDIAC VALVULAR CALCIFICATION

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Introduction

Cardiovascular diseases (CVD) are the leading cause of death in kidney transplant recipients. Vascular calcification (VC) is common complication in patients with chronic kidney disease, and associated with development of CVD. Fetuin-A levels found to be very low in patients with chronic kidney disease. Increased CVD frequency in hemodialysis patients can be related with low fetuin-A levels. The mechanisms underlying vascular and valvular calcifications are multifactorial. There are a few studies showing the relationship between low fetuin-A levels and valvular calcification in kidney transplant recipients. We aimed to evaluate the association between serum fetuin-A levels and cardiac valvular calcification in recipients after kidney transplantation.

Materials and Methods

The cardiac valvular calcifications was assessed by echocardiography in 56 kidney transplant recipients without coronary artery disease. Serum fetuin-A levels were measured by an enzyme-linked immunosorbent assay (ELISA) kit. Patients were divided into two groups: patients without cardiac valvular calcification (n=45, 22 female, median age 36 years) and patients with both aortic and/or mitral valve calcification (n=24, 8 male, median age 39 years). The extent of VC was visually assessed according to the standard visual score method: moderately calcified (multiple larger spots) and heavily calcified (extensive thickening and calcification) of all cusps.

Results

The demographic features of both group were comparable. Median dialysis durations and follow-up time after transplant of groups with non-VC and VC were 32 vs. 28 and 17 vs. 43 months, respectively (p>0.05). The obese (17.8% vs. 18.2%), abdominal obese (46.7% vs. 54.5%), smoker (13.3% vs. 0%), hypertensive (68.9% vs. 63.6%) and diabetic (20% vs. 9.1%) patient ratios in non-VC and VC groups were similar. 55.6% of non-VC group and 63.6% of VC group were doing regular physical exercise (p>0.05). There was left ventricular hypertrophy in 16 (35.6%) patients in non-VC group and 5 (45.5%) patients in non-VC group (p=0.730). Fetuin-A levels of both groups did not differ. Serum glucose levels of non-VC group were higher than that of VC group (p=0.029). There was no significant difference in mean hemoglobin, serum creatinine, uric acid, glucose, lipid profile, fibrinogen, hsCRP and left ventricle mass index values between both groups (p>0.05, Table 1). Fetuin-A level correlated with serum creatinine (r: 0.312, p=0.019). It negatively correlated with CKD-EPI eGFR (r: -0.288, p=0.031). It did not correlate with other studied parameters.

Table 1. Comparison of results in recipients with or without valvular calcification (VC)

Variables	non-VC (n=45)	VC (n=11)	p value
Body mass index (kg/m ²)	25.9±4.7	25.0±4.5	0.458
Systolic blood pressure (mmHg)	135±17	138±18	0.734
Diastolic blood pressure (mmHg)	79±11	82±11	0.463
Fetuin-A (g/L)	0.533±0.21	0.413±0.17	0.188
Hemoglobin (g/dL)	12.7±2.0	13.2±2.5	0.804
Creatinine (mg/dL)	1.39±0.55	1.43±0.64	0.853
CKD-EPI eGFR (mL/min/m ²)	62.7±19.6	58.3±21.4	0.571
Uric acid (mg/dL)	6.2±1.7	5.6±1.3	0.302
Urinary protein excretion (g/day)	0.49±1.0	0.64±1.3	0.850
Glucose (mg/dL)	96±24	84±12	0.029
Total cholesterol (mg/dL)	199±46	219±40	0.095
HDL cholesterol (mg/dL)	50±18	53±12	0.343
LDL cholesterol (mg/dL)	117±34	133±33	0.132
Triglyceride (mg/dL)	156±83	164±32	0.127
Fibrinogen (mg/dL)	4.23±1.16	3.41±0.86	0.188
Left ventricle mass index (g/m ²)	122.8±26.8	113.9±28.9	0.404
hsCRP (mg/dL)	5.8±9.3	2.2±2.0	0.306

Conclusion

We could not find a relationship between serum fetuin-A levels and VC in kidney recipients. In this population, further studies are needed to assess the role of serum fetuin-A in VC.