Relation between plasma fibroblast growth factor-23, serum fetuin-A levels and coronary artery calcification evaluated by multislice computed tomography in patients with normal kidney function.

OBJECTIVE: To examine the correlation of plasma fibroblast growth factor (FGF)-23 and serum fetuin A levels with the coronary artery calcification score (CACS) in patients with normal kidney function.

BACKGROUND: Vascular calcification is an active process that may be aggravated by hyperphosphataemia and hypercalcaemia. FGF-23 and human fetuin-A have been associated with calcifying arteriosclerosis in renal failure. Plasma FGF-23 was identified as an independent factor negatively associated with peripheral vascular calcification. Fetuin-A acts as a systemic inhibitor of ectopic calcification in dialysis patients and can be correlated to the survival of these patients. Very few data exists on the role of FGF-23 and fetuin-A in coronary calcification of patients without impaired kidney function.

MATERIALS AND METHODS: Sixty-four patients, 21 females and 43 males, were subjected to 64-slice coronary computed tomography (CT) to evaluate coronary artery calcification (CAC). Plasma intact FGF-23 was determined by ELISA. Serum fetuin-A concentration were evaluated nephelometrically.

RESULTS: Mean plasma FGF-23 level was 20.4 +/- 9.1 pg/ml and serum fetuin-A was 0.46 +/- 0.09 g/l. There was no correlation between
FGF-23 (P = 0.777) and fetuin-A (P = 0.767) levels and the CACS. No correlation was found between the presence of noncalcified plaques and coronary artery stenosis (CAS) ≥ 50%, and FGF-23 (P = 0.313 and P = 0.775) and fetuin-A levels (P = 0.601 and P = 0.659). CONCLUSION: Plasma intact FGF-23 and serum fetuin-A concentration do not correlate with the CACS, the grade of stenosis or presence of noncalcified plaques of the coronary arteries in patients with normal kidney function.