

## CORONARY CALCIFICATIONS AND SERUM LEVELS OF OSTEOPROTEGERIN (OPG) MATRIX Gla PROTEIN (MGP) AND FETUIN-A (F) IN RENAL TRANSPLANTATION (RTX)

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OPG, MGP and F are calcification inhibition proteins, variably associated with ectopic calcifications in dialysis (D), deserving a clinical evaluation also in RTX. We assayed these proteins in 52 RTX patients (age  $45 \pm 12$ ; 32 M/20 F; D since  $4,9 \pm 4,2$  years; transplanted since  $6,6 \pm 5,3$  years; Cr  $1,8 \pm 0,6$  mg/dl) and compared them with 37 D (age  $56 \pm 16$ ; 20 M/17 F; D since  $5,4 \pm 4,7$  years) and 25 normal subjects (N, age  $45 \pm 11$ ; 17 M/8 F). Patients underwent cardiac Multi-Slice Computed Tomography (MSCT) and serum sampling. OPG, MGP and F were ELISA assays. Serum OPG ( $3,7 \pm 1,5$  pmol/l in RTX;  $16,3 \pm 7,6$  in D and  $2,1 \pm 0,78$  in N) were different among the groups (ANOVA,  $p < .0001$ ), and in RTX lower than D ( $p < .05$ ) and similar to N. Values in D were higher ( $p < .05$ ) than N. Serum MGP ( $6,8 \pm 2,7$  nmol/l in RTX;  $4,4 \pm 1,9$  in D and  $9,3 \pm 2,3$  in N) were different among ( $p < .0001$ ) and between ( $p < .05$ ) the groups. Serum F ( $0,47 \pm 0,13$  g/l in RTX;  $0,39 \pm 0,11$  in HD and  $0,52 \pm 0,08$  in N) were different among the groups ( $p < .0001$ ), and in RTX higher than D ( $p < .05$ ) but similar to N ( $p = n.s.$ ). Values in D were lower than N ( $p < .0001$ ). In the whole patients the Agatston score correlated positively with age ( $r = .247$ ;  $p < .02$ ), dialysis vintage ( $r = .277$ ;  $p < .01$ ) and OPG ( $r = .213$ ;  $p < .06$ ), and negatively with F ( $r = -.281$ ;  $p < .02$ ), but not with MGP. In RTX coronary calcium score was lower than in D ( $580 \pm 1669$  vs  $1593 \pm 3515$ ;  $p < .07$ ) and significantly related to D vintage ( $r = .405$ ;  $p < .004$ ) and OPG ( $r = .377$ ;  $p < .02$ ) but not to age or RTX duration. In D the score showed a weak negative correlation with F ( $r = -.361$ ;  $p < .06$ ) but not with D vintage or age. The three proteins were not correlated in RTX or in D. Therefore, in RTX serum levels of OPG, MGP and F are normalized; this could indicate a lower risk of ectopic calcifications, compared to D. According to this hypothesis, duration of D but not of RTX was associated with coronary calcification. Serum levels of OPG and of F, but not of MGP, seem to be useful markers of vascular calcification in these patients.