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The role of osteoprotegerin (OPG), receptor activator of nuclear factor-KB ligand (RANKL) in patients with diabetic osteoarthropathy and medial arterial calcification of the legs.

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The aim of study was to evaluate a system of OPG/RANKL in patients with acute and chronic stages diabetic osteoarthropathy (DOAP) and medial arterial calcification (MAC) of the legs. **Object and methods:** 107 patients were recruited in the study including 33 patients with acute stage of DOAP, 24 patients with chronic stage of DOAP; 20 patients with severe diabetic neuropathy and MAC of the legs, confirmed by X-rays and 30 subjects with normal glucose tolerance. Mineral bone density was estimated with Dual-energy X-ray absorptiometry (DEXA) of the hips and spine (L1-L4). Assessment of bone turnover was based upon measurement of bone-specific alkaline phosphatase (BAP), OPG and RANKL. **Results:** Significant increased level of OPG revealed in all groups of patients with diabetes ($p<0,0001$). The highest values of OPG were observed in patients with MAC ($p<0,02$). Positive correlations revealed between bone-specific alkaline phosphatase (BAP) values and OPG ($r=0,2$ $p<0,01$) and BAP and RANKL ($r=0,21$ $p<0,01$) in groups of patients with diabetic osteoarthropathy. Negative correlation observed between OPG and RANKL in patients with MAC ($r=-0,68$ $p<0,001$) and negative correlation between values of mineral bone density and OPG in patients with MAC ($r = - 0,61$ $p<0,002$). **Conclusions:** changes in OPG/RANKL system might be involved in the both diabetic osteoarthropathy and medial arterial calcification of the legs.