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Correlations of Serum IL-6 Levels and Prolidase Activity Between Bone Turnover Markers and Bone Mineral Density in Postmenopausal Women With and Without Osteoporosis

Aysun TOKER[1]
Hülya AKSOY[2]
Bünyamin BÖREKÇİ[3]
Asuman ÖZKAN[2]

[1] Department of Biochemistry, Numune State Hopital, Erzurum - TURKEY
[2] Department of Biochemistry, Faculty of Medicine, Atatürk University, Erzurum - TURKEY
[3] Department of Obstetrics and Gynecology, Faculty of Medicine, Atatürk University, Erzurum - TURKEY

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Authors

medsci@tubitak.gov.tr

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Abstract: Aim: The purpose of this study was to measure serum prolidase activity and interleukin-2 and 6 (IL-2, IL-6) levels and to investigate the relationship of these parameters with bone mineral density (BMD) and bone turnover markers in postmenopausal women with and without osteoporosis. Materials and Methods: 59 postmenopausal women were included in this study (21 women with osteoporosis and 38 without). Serum IL-2 and IL-6 levels, prolidase activity, osteocalcin (OSC), calcium (Ca), alkaline phosphatase (ALP), urinary deoxypyridinoline (DPD) and BMD were measured in postmenopausal women with and without osteoporosis. Results: Serum prolidase activity was slightly higher in postmenopausal nonosteoporotic women than in postmenopausal osteoporotic women, but the difference did not reach a statistical significance. Mean values of OSC and IL-6 levels were significantly higher in postmenopausal osteoporotic than in nonosteoporotic women ($P < 0.05$). There were significant correlations between OSC with IL-6 ($r = 0.545$, $p = 0.01$) and urinary DPD ($r = -0.513$, $p = 0.01$) in postmenopausal osteoporotic women. Conclusions: Serum prolidase activity in postmenopausal osteoporotic women was not correlated with the bone turnover markers and BMD. Elevated levels of IL-6 in postmenopausal osteoporosis might have an important role in the pathogenesis of postmenopausal osteoporosis.

Key Words: Bone turnover, IL-6, IL-2, prolidase activity, postmenopausal osteoporosis

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