SERUM SCLEROSTIN LEVEL AMONG EGYPTIAN RHEUMATOID ARTHRITIS PATIENTS: RELATION TO BONE MINERAL DENSITY, DISEASE ACTIVITY AND RADIOLOGICAL GRADING

Mervat Eissa 1, Somaya Anwar 2, Sahar Fakhreldin 2, Dina Mehaney 3
1Department of rheumatology and rehabilitation, Faculty of medicine-Cairo university, Cairo, 2Department of rheumatology and rehabilitation, 3Clinical and Chemical Pathology, Faculty of medicine-Cairo university, Egypt, Egypt

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Background: Bone loss in rheumatoid arthritis (RA) is caused by increased bone resorption, however, there is no increased bone formation. The Wnt pathway is important in the control of bone formation through regulation of osteoblast activity. Sclerostin is an important regulator of the Wnt pathway by blocking Wnt binding to its receptor and thereby inhibiting bone formation. An increased sclerostin expression in synovial tissues of RA was found compared to osteoarthritis patients.

Objectives: This work aimed to study serum sclerostin level in a group of Egyptian rheumatoid arthritis patients and to correlate its level with bone mineral density (BMD), disease activity and radiological grading.

Methods: Forty RA patients, 26 (65%) were females and 14 (35%) males. Their ages ranged from 21 years to 68 years with a mean of 48.9 ± 11.6 years, their mean value of disease duration was 8 ± 6.4 years and 40 and sex matched apparently healthy subjects were included. Routine laboratory investigations and testing for serum sclerostin level were done. Plain radiographs of hands & feet and dual-energy x-ray absorptiometry (DXA) test were done for all patients.

Results: In RA patients, serum level of sclerostin ranged from 0.1 to 1.1 ng/ml with a mean of 0.4±0.2 ng/ml. In the controls, it ranged from 0.2 to 2.3 ng/ml with a mean value of 0.5±0.4 ng/ml. No significant difference was found between RA patients & healthy controls as regard mean value of serum sclerostin level. Postmenopausal RA patients had higher levels of serum sclerostin than premenopausal RA patients (mean value 0.46±0.26 and 0.29±0.18 ng/ml respectively). However, it was statistically significant on comparing healthy postmenopausal to healthy premenopausal with mean values 0.5±0.39 and 0.32±0.14 ng/ml respectively and P value = 0.02. Serum sclerostin had significantly positive correlations with age of RA onset (r=0.328, P=0.039), weight of RA patients (r=0.32, p=0.043) and negative correlation with ESR in RA patients (r= -0.34, P= 0.03). Fourteen (35%) of RA patients had osteoporosis on DXA test. There was no statistically significant correlation between serum sclerostin and BMD, disease activity or radiographic grading.

Conclusions: Serum sclerostin level in RA patients did not differ significantly from healthy subjects. Serum sclerostin levels have no correlation to disease activity, radiographic joints damage or BMD in RA. For better identification of the role of sclerostin on bone loss in RA, larger sample size is needed. More studies on serum sclerostin levels among different grades of RA activity are encouraged.


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