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Milk fat globule-epidermal growth factor 8 (MFG-E8), Vitamin D levels and disease activity of rheumatoid arthritis and osteoarthritis

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Abstract

Vitamin D (vit. D) has extraskeletal effects as well as immunomodulatory actions. Vit. D deficiency was shown to be correlated with the appearance of autoimmune diseases and many inflammatory rheumatic conditions. Milk fat globule-epidermal growth factor 8 (MFG-E8) is an anti-inflammatory glycoprotein that mediates the clearance of apoptotic cells. It is implicated in the pathogenesis of autoimmune and inflammatory diseases. The present study was intended to determine serum levels of both vit. D and MFG-E8 in rheumatoid arthritis (RA) and osteoarthritis (OA) patients, compared with healthy controls and their possible correlation. Methods: We conducted a case-control study on a total number of 85 individuals. Of those, 30 patients were diagnosed with RA, 30 patients diagnosed with OA, and 25 control subjects over an 8 -month period. Serum vit. D and MFG-E8 levels were measured using enzyme-linked immunosorbent assay (ELISA). Results: The mean vit. D and MFG-E8 levels were significantly higher in the control group and OA patients than RA patients, and significantly higher in the control group than OA & RA patients, respectively. There was a significant positive correlation between vit. D and MFG-E8 in RA patients, whereas there were no significant correlations between vit. D or MFG-E8 and other parameters in OA patients. Conclusion: Our results support an association between low serum vit. D, MFG-E8 and RA. Furthermore, it reveals an association between low serum MFG-E8 and OA. There was also a significant negative correlation between both vit. D, MFG-E8, and DAS 28 (disease activity) in the RA group. Therefore, measurement of their serum levels could be useful in the assessment of disease activity in RA patients.

Biography

Noha Nagah Mohamed Amer was doctor of philosophy degree in pharmaceutical sciences (biochemistry), faculty of pharmacy (girls) –al-azhar university. Master degree in biochemistry, faculty of pharmacy (girls) –al-azhar university. Bachelor of pharmaceutical sciences, faculty of pharmacy (girls) –al-azhar university.

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