

# The Influence Of 25(OH)D Level on the Markers of Disease Activity in Patients with Rheumatoid Arthritis

Vladyslav Povoroznyuk<sup>1</sup>, Omelyan Synenky<sup>2</sup>, Nataliya Balatska<sup>3</sup>

<sup>1,3</sup>D. F. Chebotarev Institute of Gerontology NAMS

<sup>2</sup>Lviv Regional Clinical Hospital

Ukraine

E-mails: [okfpodac@ukr.net](mailto:okfpodac@ukr.net), [balatska@ukr.net](mailto:balatska@ukr.net)

**Abstract:** Pathogenesis and etiology of rheumatoid arthritis remains unclear. Both genetic and nongenetic elements may be responsible for the prevalence of this disease. Current studies have related vitamin D deficiency with several autoimmune disorders, including rheumatoid arthritis. The aim of the study was to evaluate the influence of serum 25(OH)D level on the disease activity markers in patients with rheumatoid arthritis. The study involved 93 patients aged 27-80 years, 74.2 % were women. Mean age of women was (53.45 ± 11.16) and men (53.29 ± 12.06) yr. old ( $p > 0.05$ ). Mean duration of the disease was (8.59 ± 5.99) yrs. It was found that 54.84 % of the examined had vitamin D deficiency, and 37.63 % insufficiency. Serum 25(OH)D level was markedly lower in patients with the highest activity of rheumatoid arthritis than in patients with the minimal activity (16.55 ± 9.26 vs 22.59 ± 9.74 ng/ml,  $p < 0.05$ ). In patients with rheumatoid arthritis serum 25(OH)D level was significantly and negatively associated with markers of disease activity (DAS28-ESR ( $\beta = -0.33$ ; 95 % CI = 0.05, -0.01), CRP ( $\beta = -0.23$ ; 95 % CI = -0.72; 0.00), and ESR ( $\beta = -0.26$ ; 95 % CI = -0.78; -0.10)). All these associations remained statistically significant after adjustment for gender, age and BMI. Vitamin D deficiency can be regarded as a significant predictor of the highest activity of rheumatoid arthritis (OR=3.00 (CI 95%: 1.01-8.86,  $p < 0.05$ )). Vitamin D supplementation might be useful for improving disease activity in patients with rheumatoid arthritis.

**Key words:** rheumatoid arthritis, disease activity, vitamin D deficiency