

ROLE OF THE SERUM VITAMIN D LEVELS AND SOME CIRCULATING MICRORNAS IN PATIENTS WITH ULCERATIVE COLITIS

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ABSTRACT

The serum levels of Vitamin D and circulating micro-RNAs (miRNAs) are subject of the current research as potential predictive and/or prognostic biomarkers in inflammatory bowel disease field. 15 miRNAs expression was assessed in 27 consecutive UC patients and then correlated with the serum level of 25(OH)D, C-reactive protein (CRP), fecal calprotectin (FCP) and Partial Mayo score. There is an inverse moderate correlation between the disease activity, measured by the partial endoscopic Mayo score and Vitamin D ($r=-0.412$; $p=0.015$). There is an inverse moderate correlation between the levels of Vitamin D and the other biochemical biomarker like FCP ($r=-0.363$; $p<0.05$). The results indicate that six miRNAs have different expression according to the serum Vitamin D levels. The expression of 4 of them: miR-28_1, miR-191_1, miR-451_1 and miR-1228-3p_1 is increased in patients with normal Vitamin D serum levels. The other two miRNAs - miR-96_1 and miR-155_2 have increased expression in Vitamin D deficiency. The results indicate that the Vitamin D deficiency carries the most significant risk for a change in the miR-1228-3p_1 serum expression level. Our results indicate that there is an inverse correlation between the serum levels of Vitamin D and some disease parameters in UC patients: FCP and the partial endoscopic Mayo score. The low Vitamin D levels also correlate with an increased miR-96_1 and miR-155_2 expression. These combined identify a promising diagnostic and treatment management approaches, using the combination of Vitamin D and miRNA levels as potential prognostic for the activity of the disease and predictive for the treatment effect biomarkers, in patients with ulcerative colitis.

KEYWORDS: Ulcerative colitis, Micro-RNA, Vitamin D, CRP & Fecal calprotectin