

Serum levels of inflammatory cytokines after supplementation of vitamin D in patient with multiple sclerosis (MS) treated by interferon – β (IFN β).

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Introduction: In this study concerning IFN β treated MS patients the effect of vitamin D on the serum levels of inflammatory cytokines was evaluated. Materials and methods: Thirty three IFN β treated patients (age from 18 to 50) with relapsing-remitting MS, EDSS \leq 4.0 were enrolled to the study. They received orally 1000 IU of vitamin D for nine month. Serum concentrations of 25(OH)D, interleukin 10, 17a, TGF β and IFNY were analyzed before and after the supplementation of vitamin D. Result: Under supplementation of vitamin D the increased level of 25(OH)D was noticed (relatively 43.8 \pm 21.5 before and 106.7 \pm 41.1 nmol/l after supplementation, p0.001). Levels of anti-inflammatory cytokines TGF β and IL10 measured at baseline (relatively 75.2 \pm 23.1, 13 \pm 5.5 pg/ml) in comparison to the results obtained after 9 month supplementation (relatively 111 \pm 28.6, 17.5 \pm 5.6 pg/ml) turned out significantly increased. In relation to the concentration of proinflammatory cytokine IL17a a statistically significant difference was not observed when the results were compared before and after supplementation of vitamin D (p0.3). The levels of IFNY were increased (from 3.35 \pm 6.2 to 4.51 \pm 7.1 pg/ml relatively before and after supplementation) p0,0005. Conclusion: Vitamin D application in dose of 1000 IU daily is sufficient to compensate vitamin D deficiency in MS patients. It is accompanied by the increased level in anti-inflammatory cytokines (IL10,TGF β). It may be assumed that the lack of endogenous IFN β reduces the effect of vitamin D on IFNY production by T cells. Moreover, the increased level of IFNY in serum may result from a stable level of IL17a.