# Level of proinflammatory (TNF-α, IL-6) and anti-inflammatory (IL-4, IL-10) interleukins in blood serum in patients with recurrent chorioretinitis of cytomegalovirus etiology.

Imaging

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Purpose

to investigate the level of pro-inflammatory (TNF-α, IL-6) and anti-inflammatory (IL-4, IL-10) interleukins in the blood serum of patients with recurrent chorioretinitis of cytomegalovirus etiology at different periods of its course, depending on the nature of the relapse. Methods of treatment of recurrent forms of chorioretinitis caused by cytomegalovirus are not perfect, and prevention and prognosis of its development are controversial. is a chronic immune inflammatory condition, which is characterized by infiltration and proliferation consisting of inflammatory cells, including lymphocytes and neutrophils.

Setting/Venue

Odessa National Medical University SI: “The Filatov Institute of Eye Diseases and Tissue Therapy of the NAMS of Ukraine”, Odessa, Ukraine

Methods

33 patients with recurrent chorioretinitis underwent research in the immunology laboratory. Rarely recurrent process (relapse 1 time per year or less) was in 15 people, frequently recurrent (relapse more than 1 time per year) in 18 people. Determination of cytokines in blood serum was performed by solid-phase enzyme-linked immunosorbent assay using reagent kits for quantitative determination of the concentration of interleukins 4, 6, 10 and tumor necrosis factor TNF-α in biological fluid according to the attached instructions. The results were evaluated photometrically (Stat Fax 2100 microplate enzyme immunoassay analyzer, USA).

Results

In rarely recurrent chorioretinitis during the remission period, the concentrations of the pro-inflammatory cytokine TNF-α, anti-inflammatory interleukins IL-4 and IL-10 exceeded the norm by 4, 8.5 and 1.42 times, respectively. The level of IL-6 expression was characterized by high variability. In relapse, only the concentration of TNF-α increased significantly by 65%, which was 6.6 times higher than the norm. The level of anti-inflammatory cytokines IL-4 and IL-10 did not change significantly, remaining high. During exacerbation of the process, this indicator exceeded the norm by 5 times. The concentration of IL-6 was on average 1.8 times higher than the norm both in remission and in relapse. The concentration of IL-4 was on average 17 times, and IL-10 was 2 times higher than the reference norm. In a comparative analysis, the concentration of TNF-α in frequently relapsing chorioretinitis in remission and relapse was significantly lower - by 35% and 21%, respectively, than in rare relapse, while IL-6 was higher in frequent relapses. In frequently relapsing - the level of anti-inflammatory IL-4 and IL-10 was higher in both remission and relapse by 2.0 and 1.7 times, respectively, than in rare relapse.

Conclusions

TNF-α in-patient with frequent relapses during remission and relapse were significantly lower - by 35% and 21%, respectively, than in rare relapses. Lower concentrations of TNF-α in frequent relapses are compensated by an increase in pro-inflammatory IL-6. Baseline values of the cytokine IL-4 are 2.0 times higher, and IL-10 is 1.7 times higher in the group with frequent relapses than in rare relapses.

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