



## Effect of luteinizing hormone-releasing hormone (LHRH) analogue treatment on a cytokine profile in prostate cancer patients

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### Abstract:

The aim of the study was to test serum concentrations of the chosen cytokines in patients with prostate cancer (PCa) treated with an luteinizing hormone-releasing hormone (LHRH) analogue. We tested interleukin (IL)-2, IL-10, tumor necrosis factor (TNF)- $\alpha$ , interferon (INF)- $\gamma$  in blood at three time points; I – before the injection, II – 10 days and III – 20 days after the injection in 14 men with PCa. Patients had one depot injection of the LHRH analogue monthly. The cytokine concentrations in serum samples were determined by ELISA method. Prostate specific antigen (PSA) level was examined before and after six months of the LHRH analogue treatment. After six months of the therapy, we observed normalization of serum PSA value from 16.48 ng/ml to 1.45 ng/ml. LHRH analogue injection resulted in a significant drop of the IL-2 concentration, and the value gradually returned to normal in the next 20 days. IL-10 concentration transiently increased and then was down-regulated. Serum TNF- $\alpha$  and INF- $\gamma$  concentrations in PCa patients were significantly lower compared to controls and were not affected by the treatment. LHRH analogue treatment in PCa patients modulates concentrations of the chosen cytokines which may result both in antitumor and a transient immunosuppressive effect.

### Key words:

steroid hormones, LHRH analogue, cytokines, prostate cancer

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