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Title

Lactoferrin increases the output of neutrophil precursors and attenuates the spontaneous production of TNF-alpha and IL-6 by peripheral blood cells.

Source

Archivum Immunologiae et Therapiae Experimentalis. 47(2):113-8, 1999.

Abstract

The aim of this report was to investigate the effects of bovine lactoferrin (BLF) taken orally (per os) by healthy individuals, on selected immune parameters. Three groups of volunteers (7 persons per group) were taken daily for 7 days, one capsule containing 2, 10 or 50 mg of BLF. A control group has taken placebo only. Venous blood was taken for tests a few hours before the first dose of BLF, one day and 14 days after the last dose of the preparation. For the evaluation of BLF action on the immune response system we have chosen 3 parameters: content of neutrophil precursors in the peripheral blood (in percentage), spontaneous production of interleukin 6 (IL-6) and tumor necrosis factor alpha (TNF-alpha) by unstimulated blood cell cultures. We found that oral treatment of volunteers with BLF caused a transient (one day after last dose) increase of immature forms of neutrophils in the circulating blood. That increase was more than 2-fold in the case of 10 mg dose. However, statistically significant increases in the percentage of neutrophil precursors were also registered at doses of 2 and 50 mg of BLF. No change in the immature cell content was observed in the placebo group. The treatment with BLF also resulted in a profound decrease of the spontaneous production of IL-6 and TNF-alpha by cultures of peripheral blood cells. This decrease was significant (10 mg/dose) one day following the last dose of BLF and persisted for additional 14 days. These results confirmed our earlier data on the effects of per os treatment with a nutritional preparation containing BLF. Furthermore, we were able to closer establish the optimal dose of BLF affecting selected immune