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Perioperative immunological changes in colorectal cancer patients

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The aim of the study was to investigate the perioperative immunological profile in colon cancer patients and possible correlations with disease. To investigate the changes in immune mediators profile induced by tumor resection, we assessed the serum levels of cytokines (IL-6, IL-8, IL-10, IFN-g, TNF-a), chemokines (MIP-1a, MCP-1, ENA-78) and growth factors (VEGF, bFGF) in colon cancer patients before, during and after surgery and compared the results with those measured for a group of healthy controls. We have used XMap profiling technology (Luminex) that allows simultaneous measurement of multiple parameters in small volumes of samples. Circulating levels of proinflammatory cytokines IL-1, IL-6, IL-8 and antiinflamatory cytokine IL-10 were elevated in cancer patients with respect to healthy controls. Before surgery, serum levels of MCP-1 and MIP-1alpha positively correlated with the levels of proinflammatory cytokines. During surgery, an increase in serum concentration of all determined mediators was noticed, with positive correlation between TNF-a, IL-8, MCP-1 and MIP-1a. Interestingly, these correlations were no more noticed one week after operation. Post-operatively, cytokines levels decreased as compared to those noticed before surgery, but still higher than in control group. These preliminary results suggest that both tumor and surgical act may influence immune mediators' network.

Key words: colorectal cancer, cytokine, Multiplex

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