

# Influence of surgical trauma on neopterin concentrations in gastric carcinoma patients

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## ABSTRACT

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**Aims and background.** Impairment of immune surveillance in the immediate postoperative period may accelerate the growth of tumor cells that remain despite radical resection in advanced cases. The present study was undertaken to evaluate the impact of major surgical trauma on host cellular immunity of gastric carcinoma cases.

**Methods and study design.** Sixty-eight consecutive patients with gastric carcinoma were divided into three subgroups according to the classification of the American Joint Committee on Cancer Staging, and they underwent surgery with a curative intent. Thirty-eight cancer-free patients served as controls, and they underwent surgical management for benign diseases. Physiological and Operative Severity Score for the enUmeration of Mortality and Morbidity (POSSUM) risk adjustment system was used to estimate the operative and physiological scores of patients. Plasma cortisol, serum interleukin-6 and high-sensitive C-reactive protein levels were determined in order to assess the severity of trauma-related inflammatory response. The frequency of increased neopterin concentrations of cancer patients was estimated by comparison with the average values of controls.

**Results.** Response of interleukin-6 to surgery was closely related with the postoperative cortisol of cancer patients, but not correlated with neopterin and high-sensitive C-reactive protein levels. Although the extent of tumor invasion might have gradually decreased the macrophage response to surgical trauma, the overall increase in postoperative neopterin levels of cancer cases was highly significant. However, maximal frequency of increased neopterin concentration was obtained in advanced group.

**Conclusions.** Macrophages might recognize the traumatic challenges in every stage of gastric cancer. Increasing individual neopterin concentration was not solely specific for tumor growth, but it was partially predictive of immune competence even in advanced cases. Free full text available at [www.tumorionline.it](http://www.tumorionline.it)

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**Key words:** cortisol, gastric carcinoma, interleukin-6, neopterin, surgical trauma.

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