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Abstract

Assessment of the Relationship between Selected Parameters of Inflammation in Patients with Neuroendocrine Neoplasms †

Marlena Budek [1,*], Jarosław Nuszkiewicz [1], Jolanta Czuczejko [2,3] and Karolina Szewczyk-Golec [1]

[1] Department of Medical Biology and Biochemistry, Faculty of Medicine, Ludwik Rydygier Collegium Medicum in Bydgoszcz, Nicolaus Copernicus University in Toruń, 24 Karłowicza St., 85-092 Bydgoszcz, Poland
[2] Department of Psychiatry, Faculty of Medicine, Ludwik Rydygier Collegium Medicum in Bydgoszcz, Nicolaus Copernicus University in Toruń, 9 M. Curie-Skłodowskiej St., 85-094 Bydgoszcz, Poland
[3] Department of Nuclear Medicine, Oncology Centre—Prof. Franciszek Łukaszczyk Memorial Hospital, 2 Dr I. Romanowskiej St., 85-796 Bydgoszcz, Poland
* Correspondence: mmarkiewicz@doktorant.umk.pl
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Abstract: Neuroendocrine tumors (NENs) originate from neuroendocrine cells located in a wide variety of organ systems. Gastrointestinal-pancreatic tumors (GEP-NETs) constitute the largest group (approximately 70%). NENs are heterogeneous in terms of location, malignancy potential, prognosis, treatment methods and functionality, which often makes their diagnosis difficult. The accumulating evidence points to the role of inflammatory factors in the GEP-NETs microenvironment. The aim of the study was to determine the concentrations of interferon gamma (IFN-γ), interleukin 6 (IL-6), monocyte chemoattractant protein-1 (MCP-1) and interleukin 10 (IL-10) in patients with GEP-NETs. The study included 63 patients of the Prof. F. Łukaszczyk Oncology Center in Bydgoszcz with a diagnosis of neuroendocrine neoplasms of the gastrointestinal tract (GT, n = 42) and pancreas (PA, n = 21). The concentration of cytokines was measured by the enzyme immunoassay method using ready-made ELISA kits. A statistical analysis was performed and $p < 0.05$ was considered as statistically significant. The results were presented as the mean value and the standard error. The levels of IFN-γ, IL-6 and MCP-1 were statistically higher in the PA group than in the patients with GT-NENs. The concentration of IL-10, which is a factor inhibiting cytokine synthesis, did not show a significant difference between the GT and PA groups. Increased levels of inflammation in pancreatic NENs, compared to gastrointestinal NENs, have been observed. It has been noted that the disturbed balance between pro-inflammatory and anti-inflammatory factors may play a role in the development of neuroendocrine tumors.

Keywords: cytokine; gastroenteropencreatic tumors; inflammation; neuroendocrine tumors

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