

## Abstract

# Selected Biomarkers of Inflammation in Patients with Head and Neck Cancer Depending on the Tumor Location <sup>†</sup>

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<sup>†</sup> Presented at the 8th International Electronic Conference on Medicinal Chemistry, 1–30 November 2022; Available online: <https://ecmc2022.sciforum.net/>.

**Abstract:** Head and neck cancers (HNCs) are a group of neoplasms located in the area of the oral cavity, pharynx, larynx, paranasal sinuses, nasal cavity and salivary glands. HNCs are the sixth most common type of cancer in the Europe population. As in other neoplastic diseases, chronic inflammation occurs in HNC, affecting not only the location of the tumor, but also distant healthy tissues. In patients with HNC, changes in the levels of pro- and anti-inflammatory cytokines are observed. The aim of this study was to assess the level of interleukin 3 (IL-3), IL-4, IL-13, monocyte chemoattractant protein 1 (MCP-1) and MCP-2 in patients with HNC depending on the tumor localization. The study group consisted of 40 HNC patients divided into two groups according to the localization of the tumor: 20 subjects with cancer located in the area of the oral cavity (OC) and 20 subjects with cancer located in the area of pharynx and larynx (PL). Blood serum samples were used to perform the analyses. A value of  $p < 0.05$  was considered as statistically significant. In the PL group, statistically significant higher concentrations of IL-13 and MCP-1 were observed. The level of IL-13 in the OC group was  $3.99 \pm 0.50$  pg/mL, while in the PL group it was  $5.79 \pm 0.64$  pg/mL. The MCP-1 concentration was  $68.15 \pm 7.06$  pg/mL and  $109.01 \pm 10.76$  pg/mL, respectively. There were no statistically significant differences in the levels of IL-3, IL-4 and MCP-2. This experiment indicates that IL-13 and MCP-1 may be potential biomarkers differentiating tumor localization in patients with HNC.



**Citation:** Nuskiewicz, J.; Budek, M.; Czuczejko, J.; Szewczyk-Golec, K. Selected Biomarkers of Inflammation in Patients with Head and Neck Cancer Depending on the Tumor Location. *Med. Sci. Forum* **2022**, *14*, 29. <https://doi.org/10.3390/ECMC2022-13297>

Academic Editor: Maria Emília Sousa

Published: 1 November 2022

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**Keywords:** biomarkers; cytokines; head and neck cancer; inflammation

**Supplementary Materials:** The following are available online at <https://www.mdpi.com/article/10.3390/ECMC2022-13297/s1>.

**Author Contributions:** Conceptualization, J.N. and K.S.-G.; methodology, J.N. and K.S.-G.; formal analysis, J.N. and K.S.-G.; investigation, J.N., M.B. and K.S.-G.; resources, J.N., J.C. and K.S.-G.; data curation, J.N.; writing—original draft preparation, J.N.; writing—review and editing, J.N. and K.S.-G.; visualization, J.N.; supervision, K.S.-G.; project administration, J.N. and K.S.-G.; funding acquisition, J.N. and K.S.-G. All authors have read and agreed to the published version of the manuscript.

**Funding:** This research was funded by the Faculty of Medicine, Ludwik Rydygier Collegium Medicum in Bydgoszcz, Nicolaus Copernicus University, Poland, grant number ZES.WL.10.2021.

**Institutional Review Board Statement:** The study was conducted in accordance with the Declaration of Helsinki, and approved by the Bioethics Committee of the Nicolaus Copernicus University in Toruń functioning at Collegium Medicum in Bydgoszcz, Poland (consent No. KB 221/2018).

**Informed Consent Statement:** Informed consent was obtained from all subjects involved in the study.

**Data Availability Statement:** Data are available on request due to privacy/ethical restrictions.

**Conflicts of Interest:** The authors declare no conflict of interest.