

- Head and Neck
- [Published: 31 January 2022](#)

Neutrophil-to-lymphocyte ratio as a prognostic marker for head and neck cancer with lung metastasis: a retrospective study

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[European Archives of Oto-Rhino-Laryngology](#) **volume 279**, pages 4103–4111
(2022) [Cite this article](#)

- **223** Accesses
- **2** Citations
- **1** Altmetric
- [Metrics details](#)

A [Letter to the Editor](#) to this article was published on 18 April 2022

Abstract

Purpose

The neutrophil-to-lymphocyte ratio (NLR) is the most widely biomarker used to assess the inflammatory system in various solid cancers. An elevated NLR has been reported to be associated with worse outcomes in head and neck squamous cell cancers (HNSCC). However, questions remain about the prognostic value of these findings in HNSCC patients with lung metastasis. This study aims to quantify the prognostic impact of NLR on HNSCC patients with lung metastasis.

Methods

A retrospective chart review of 169 HNSCC patients was performed at the Otorhinolaryngology and the Stomatology and Maxillofacial Surgery Department (Saint-Pierre Hospital), between 2000 and 2017. All patients were divided into two subgroups. Patients who developed lung involvement were assigned to the lung-metastasis-group (LM-group) in contrast to no-lung-metastasis-group patients (NLM-group). The prognostic significance of NLR was evaluated using multivariable analysis adjusting for overall-survival (OS) and lung-metastasis-free-survival (LMFS).

Results

95 patients were enrolled in the NLM-group while 74 were in the LM-group. Multivariable analysis highlights that patients with a higher NLR value had shortened OS in the NLM subgroup (HR 1.3; $p = 0.024$). However, this association was not found in the LM subgroup. When considering both subgroups, an elevated NLR was reported as a prognostic factor of poor LMFS (HR 1.65; $p = 0.047$).

Conclusion

Our data revealed that pretreatment NLR is an independent prognostic factor of mortality and lung metastasis development. However, the prognostic value of NLR is not confirmed in patients who suffered from lung metastasis. Physicians should integrate these findings in their treatment algorithm approach.