

RATIO OF NEUTROPHIL TO LYMPHOCYTES AS A RISK FACTOR OF INCOMPLETE RESPONSE IN LARYNGEAL CARCINOMA PATIENTS RECEIVING CHEMORADIOTHERAPY

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ABSTRACT

Background: Squamous cell carcinoma of the larynx accounts for 85-95% of all laryngeal cancer, is a common head and neck cancer. Despite advances in diagnostic and treatment methods, the clinical prognosis of laryngeal squamous cell carcinoma has not improved significantly in the past 30 years. Therefore, it is very important to estimate the effectiveness of new prognostic markers to optimize therapeutic strategies. A high neutrophil lymphocyte (RNL) ratio is known to be a poor risk factor for head and neck cancer. The immune status of the host is determined by RNL wherein RNL can be used as a predictor for recurrence after chemoradiotherapy in head and neck cancer.

Objective: To determine the high neutrophil lymphocyte ratio as a risk factor for incomplete response in laryngeal carcinoma patients undergoing chemoradiotherapy.

Methods: This analytic observational study used a case-control study design. The research sample data was taken from medical records of laryngeal carcinoma patients who had undergone chemoradiotherapy at RSUP DR Sardjito since January 2015 - December 2019. Laryngeal carcinoma patients with complete responses were included as control groups and patients with incomplete responses were included as case groups. In both groups, the NLR ratio was assessed and analyzed using the chi square test.

Results: The study subjects were 60 patients, 30 patients with laryngeal carcinoma with complete response and 30 with incomplete response. The cut off point of the RNL value based on the receiver operating characteristic analysis curve was found to be 3.39 with a sensitivity value of 63.3% and a specificity value of 76.7%. Patients with high RNL were at risk of NCR 5.68 times compared to low RNL ($p=0.002$)

Conclusion: Patients with laryngeal carcinoma with high RNL are at greater risk of developing NCR than low RNL. This can make the neutrophil lymphocyteratio as a risk factor for incomplete response in laryngeal carcinoma patients undergoing chemoradiotherapy.

Keywords: Laryngeal Carcinoma, Chemoradiotherapy Response, Neutrophil Lymphocyte Ratio