

**00101 A New Prognostic Marker for Laryngeal Squamous Cell Carcinoma - The Pre-treatment and Post-treatment Neutrophil/lymphocyte Ratio**

*Isabelle Jang, Kam Jia Wen, Huang Xin Yong*

Changi General Hospital

**Aims:** Recent evidence has shown that the immune system plays a role in tumorigenesis. The neutrophil/lymphocyte ratio (NLR) has been found to be predictive of survival outcome in a range of solid tumors – including those with lung, esophageal, renal and colorectal carcinoma; and more recently head and neck squamous cell carcinoma (SCC).

This study aimed to investigate the prognostic value of pre-treatment and posttreatment NLR in patients with laryngeal SCC.

**Methodology:** A retrospective review of patients who presented with laryngeal SCC between January 2005 and June 2016 in a single tertiary acute care hospital was performed, with institutional review board approval.

**Result:** 104 patients were treated curatively, with a mean age of  $64.7 \pm 10.7$  years. Percentage of patients with Stage I, II, III and IV were 44.2%, 16.3%, 14.4% and 25.0% respectively. On the receiver operating characteristic (ROC) curve, the optimal cut-off value of pre-treatment NLR for disease specific survival (DSS) was 2.85, with a negative predictive value of 95.7%. The optimal cut-off value for three-month post-treatment NLR was 3.72, with a negative predictive value of 100.0%. In the pre-treatment NLR < 2.85 group, the 5-year overall survival (OS) rate was 83.0%, compared to 51.7% in the  $\geq 2.85$  group ( $p = 0.002$ ). In the pretreatment NLR < 2.85 group, 5-year DSS rate was 94.1% compared to 67.6% in the  $\geq 2.85$  group ( $p<0.001$ ). In the post-treatment NLR <3.72 group, 5-year OS was 86.3% compared to 37.4% in the  $\geq 3.72$  group ( $p=0.008$ ). 5-year DSS was 100.0% in the post-treatment NLR <3.72 group, compared to 52.7% in the  $\geq 3.72$  group ( $p=0.005$ ). Cox regression analysis showed that pre-treatment NLR  $\geq 2.85$  was an independent prognostic factor for DSS [Hazard ratio (HR) 5.1, 95% confidence interval (CI) 1.1-24.1;  $p = 0.038$ ].

**Conclusion:** Pre-treatment NLR < 2.85 is potential prognostic tool for patients with laryngeal SCC.