

## Neutrophil-Lymphocyte Ratio as a Prognostic Factor in Terminally Ill Cancer Patients

Wanje Cho<sup>1</sup>, Jae Yong Shim<sup>1</sup>, Hye Ree Lee<sup>1</sup>,  
Ga Hyun Son<sup>2</sup>, Seung-Min Oh<sup>3</sup>

<sup>1</sup>*Department of Family Medicine, Yonsei University, Korea,*  
<sup>2</sup>*Department of Obstetrics and Gynecology, Yonsei University, Korea,*  
<sup>3</sup>*Department of Medical Education, Yonsei University, Korea*



Wanje Cho

**Background:** It is important to estimate the survival time of a terminally ill cancer patient as accurate as possible, in order to establish efficient palliative treatment plans. Proper estimation of life expectancy aids in improving the quality of life of the patient; it also promotes productive communication between the medical staff and the patient. The aim of this study is to determine the efficacy of neutrophil-lymphocyte ratio as a predictor of survival time in terminally ill cancer patients.

**Method:** Between January 2004 and June 2007, sixty-seven terminally ill cancer patients who were admitted or transferred for palliative care, were included. Patients were categorized into three groups by Neutrophil-Lymphocyte Ratio. Demographic characteristics, clinical characteristics, blood samples and Chest PA were analyzed.

**Results:** In univariate analysis, survival time of the highest Neutrophil-Lymphocyte Ratio group ( $>12.5$ ) was significantly shorter than that of the others (hazard ratio (HR)=3.444,  $P<0.001$ ). After adjustment for low performance status (ECOG score 4), high Neutrophil-Lymphocyte Ratio ( $>12.5$ ) was significantly and independently associated with short survival time (HR=2.821,  $P=0.007$ ). Neutrophil-Lymphocyte Ratio was also significantly increased before death ( $P=0.001$ ).

**Conclusion:** Neutrophil-Lymphocyte Ratio can be useful in predicting life expectancy in terminally ill cancer patients.

**Key Words:** Neutrophil-Lymphocyte ratio, terminal cancer, survival time, prognostic factor