

## ABSTRAK

### **Rasio neutrofil limfosit, rasio limfosit monosit dan skor prognostik limfosit monosit sebagai faktor prognostik pada *Diffuse Large B Cell Lymphoma***

**Latar belakang:** *Diffuse Large B cell Lymphoma* (DLBCL) merupakan limfoma tersering di Indonesia. Neutrofil dan monosit bisa menggambarkan adanya respon inflamasi dan lingkungan mikro tumor, sedangkan limfosit bisa menggambarkan respon imun adaptif pejamu. Penelitian ini menilai kombinasi hitung jenis leukosit sebagai prediktor kesintasan pascakemoterapi R-CHOP pada pasien DLBCL.

**Tujuan:** mengetahui hubungan rasio neutrofil limfosit (NLR), rasio limfosit monosit (LMR), dan skor prognostik limfosit monosit (SPLM) sebagai prediktor kesintasan 3 tahun pada pasien DLBCL.

**Metode:** kohort retrospektif di RSUP. Sardjito. Pasien DLBCL yang baru terdiagnosa tahun 2012-2016 dan mendapatkan kemoterapi minimal 6 kali dengan regimen R-CHOP.

**Hasil:** jumlah subjek 125 pasien, median usia 55 tahun, median *follow up* 26 bulan, dari uji univariate didapatkan  $NLR > 3,2$  [ $p=0,013$ ],  $LMR \leq 2,8$  [ $p=0,044$ ], SPLM *intermediate* [ $p=0,019$ ], dan *highrisk* [ $p=0,005$ ]. Hasil ini dilanjutkan dengan uji *multivariate*  $NLR > 3,2$  [HR 2,35 (95% CI 0,94 – 5,85)  $p=0,068$ ],  $LMR \leq 2,8$  [HR 1,63 (95% CI 0,67 – 3,97)  $p=0,285$ ], SPLM *intermediate* [HR 4,02 (95% CI 1,15 – 14,05)  $p=0,029$ ], dan *highrisk* [HR 5,78 (95% CI 1,42 – 23,40)  $p=0,014$ ].

Dilakukan analisa lanjut, pada 48% kasus terfollow up lengkap. Uji *univariate* didapatkan  $NLR > 3,2$  [ $p=0,013$ ],  $LMR \leq 2,8$  [ $p=0,152$ ], SPLM *intermediate* [ $p=0,05$ ], SPLM *highrisk* [ $p=0,007$ ]. Hasil ini dilanjutkan dengan uji *multivariate*  $NLR > 3,2$  [HR 1,78 (95% CI 0,65 – 4,9)  $p=0,26$ ] SPLM *intermediate* [HR 3,59 (95% CI 1,02 -12,59)  $p=0,046$ ], dan *highrisk* [HR 8,83 (95% CI 2,11 – 36,94)  $p=0,002$ ].

**Simpulan:** secara konsiten SPLM menjadi faktor prognostik kesintasan 3 tahun independen, dimana SPLM *intermediate* dan *highrisk* memiliki prognostik yang lebih buruk pada pasien DLBCL.

**Kata kunci:** *Diffuse Large B Cell Lymphoma*, rasio neutrofil limfosit, rasio limfosit monosit, skor prognostik limfosit monosit.

## ABSTRACT

### Neutrophil Lymphocyte Ratio, Lymphocyte Monocyte Ratio, and Lymphocyte Monocyte Prognostic Score as prognostic factors in Diffuse Large B-Cell Lymphoma

**Background:** *Diffuse Large B cell Lymphoma* (DLBCL) is the most common lymphoma in Indonesia. Neutrophils and monocytes can represent an inflammatory response and tumor microenvironment, whereas lymphocytes can represent a host adaptive immune response. This study assessed the combined leukocyte count as a predictor of post-chemotherapy R-CHOP survival in DLBCL patients.

**Objective:** know the relationship between neutrophil lymphocyte ratio (NLR), lymphocyte monocyte ratio (LMR), and lymphocyte monocyte prognostic score (SPLM) as predictors of 3-year survival in DLBCL patients.

**Methods:** retrospective cohort in RSUP. Sardjito. DLBCL patients who were newly diagnosed in 2012-2016 and received chemotherapy at least 6 times with the R-CHOP regimen.

**Results:** The number of subjects was 125 patients, median age 55 years, median follow-up 26 months, from the univariate test obtained  $NLR > 3.2$  [ $p = 0.013$ ],  $LMR < 2.8$  [ $p = 0.044$ ], intermediate SPLM [ $p = 0.019$ ], and highrisk [ $p = 0.005$ ]. These results were followed by multivariate test  $NLR > 3.2$  [HR 2.35 (95% CI 0.94 - 5.85)  $p = 0.068$ ],  $LMR < 2.8$  [HR 1.63 (95% CI 0.67) - 3.97)  $p = 0.285$ ], intermediate SPLM [HR 4.02 (95% CI 1.15 - 14.05)  $p = 0.029$ ], and high risk [HR 5.78 (95% CI 1.42 - 23, 40)  $p = 0.014$ ].

Further analysis was carried out, in 48% of cases were followed up completely. The univariate test obtained  $NLR > 3,2$  [ $p = 0,013$ ],  $LMR < 2,8$  [ $p = 0,152$ ], intermediate SPLM [ $p = 0,05$ ], high risk SPLM [ $p = 0,007$ ]. These results were followed by multivariate NLR test  $> 3.2$  [HR 1.78 (95% CI 0.65 - 4.9)  $p = 0.26$ ] SPLM intermediate [HR 3.59 (95% CI 1.02 -12 , 59)  $p = 0.046$ ], and high risk [HR 8.83 (95% CI 2.11 - 36.94)  $p = 0.002$ ].

**Conclusion:** Consistently SPLM was an independent prognostic factor for 3-year survival, whereas intermediate and high-risk SPLM had a worse prognostic outcome in DLBCL patients.

**Keyword :** Diffuse Large B Cell Lymphoma, lymphocyte neutrophil ratio, lymphocyte monocyte ratio, lymphocyte monocyte prognostic score