

## Hubungan rasio neutrofil limfosit dengan kejadian kaheksia pada tumor sistem saraf pusat = Relationship between neutrophil lymphocyte ratio and the incidence of cachexia in central nervous system tumors

Audria Graciela, author

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### Abstrak

Latar Belakang: Tumor sistem saraf pusat (SSP) merupakan salah satu penyebab utama morbiditas di seluruh dunia yang menyebabkan disabilitas dan penurunan kualitas hidup. Tumor SSP menyebabkan defisit neurologis dan berisiko terjadinya kaheksia. Kaheksia dihubungkan dengan penurunan respons pengobatan dan penurunan kesintasan. Peradangan sistemik merupakan ciri khas kaheksia. Rasio neutrofil limfosit (RNL) merupakan penanda inflamasi sistemik yang mudah dan rutin diperiksa dengan harga yang tidak mahal. Belum diketahui hubungan antara RNL dengan kejadian kaheksia pada tumor SSP.

Metode: Studi potong lintang ini dilakukan pada subjek berusia 18–65 tahun di RSUPN Dr. Cipto Mangunkusumo, yang dirawat dengan diagnosis tumor SSP pada bulan November hingga Desember 2023. Nilai RNL diambil dari pemeriksaan darah perifer lengkap dan dilakukan penegakan diagnosis kaheksia berdasarkan kriteria Evans. Dilakukan analisis hubungan RNL dengan kejadian kaheksia.

Hasil: Terdapat 50 subjek dengan diagnosis tumor SSP. Median RNL adalah 4,13 (1,26; 23,22). Nilai RNL secara signifikan lebih tinggi pada kelompok subjek yang mengalami kaheksia (median RNL 7,19 (1,26; 23,22)) dibandingkan tanpa kaheksia (median RNL 3,10 (1,40; 8,48)) ( $p < 0,001$ ).

Simpulan: RNL berhubungan dengan kejadian kaheksia pada tumor SSP. Subjek yang mengalami kaheksia memiliki RNL yang lebih tinggi dibandingkan dengan yang tidak kaheksia.

.....Background: Central nervous system (CNS) tumors are one of the leading causes of morbidity worldwide, causing disability and decreased quality of life. Central nervous system tumors cause neurological deficits and are at risk of developing cachexia. Cachexia is associated with decreased treatment response and reduced survival. Systemic inflammation is the hallmark of cachexia. Neutrophil lymphocyte ratio (NLR) is a systemic inflammation that included in routine laboratory examination and inexpensive. The association between NLR and the incidence of cachexia in CNS tumors remain unknown.

Methods: This cross-sectional study was conducted on subjects aged 18–65 years old at RSUPN Dr. Cipto Mangunkusumo Hospital, who were admitted with CNS tumor diagnosis from November to December 2023. The NLR value was taken from the complete peripheral blood examination and the diagnosis of cachexia was based on Evans criteria. The relationship between NLR and the incidence of cachexia was analyzed.

Results: There were 50 subjects with CNS tumor diagnosis. The median NLR was 4,13 (1,26; 23,22). The mean NLR was significantly higher in the group of subjects with cachexia (median NLR 7,19 (1,26; 23,22)) than without cachexia (median NLR 3,10 (1,40; 8,48)) ( $p < 0,001$ ).

Conclusion: NLR is associated with the incidence of cachexia in CNS tumors. Subjects with cachexia had higher NLR compared to those without cachexia.