

# Hubungan asupan asam lemak Omega-3 dengan C-Reactive Protein pada pasien tumor sistem saraf pusat Di Rumah Sakit Cipto Mangunkusumo = Association between Omega-3 fatty acid intake and C-Reactive Protein in patients with central nervous system tumor in Cipto Mangunkusumo Hospital

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## Abstrak

Latar Belakang : Inflamasi kronik berhubungan dengan tumor dan menyebabkan prognosis yang buruk pada pasien kanker. Salah satu penanda inflamasi yang meningkat pada tumor adalah C-Reactive Protein (CRP). Kadar CRP meningkat pada lebih dari 50% pasien keganasan. Peningkatan CRP berhubungan kuat dengan keparahan penyakit pada beberapa kanker. Salah satu zat gizi dalam inflamasi adalah asam lemak omega-3. Asam lemak omega-3 dapat meningkatkan pembentukan specialized pro-resolving mediators (SPM) yang berfungsi meningkatkan mediator antiinflamasi, melindungi blood brain barrier, menurunkan sitokin proinflamasi, menurunkan apoptosis neuron. Penelitian ini bertujuan untuk menilai hubungan asupan asam lemak omega-3 dengan CRP pada pasien tumor sistem saraf pusat.

Metode : Studi potong lintang ini dilakukan pada subjek berusia 18-65 tahun di RSUPN Cipto Mangunkusumo pada bulan November hingga Desember 2023. Pengukuran CRP menggunakan metode immunoturbidimetric assay. Pengambilan asupan asam lemak omega-3 menggunakan Food Frequency Questionnaires semikuantitatif. Analisis bivariat digunakan untuk menilai hubungan antara variabel bebas dan terikat.

Hasil : Dari total 63 subjek penelitian, sebanyak 35 subjek (55,6%) pada kelompok asupan asam lemak omega-3 < 2 g/hari dan 28 subjek (44,4%) pada kelompok asupan asam lemak omega-3 ≥ 2 g/hari. Nilai median CRP 8,3 (0,6 – 71,5) mg/L. Tidak terdapat hubungan yang bermakna ( $p = 0,714$ ) antara asupan asam lemak omega-3 dengan CRP pada pasien tumor sistem saraf pusat.

Kesimpulan : Tidak terdapat hubungan bermakna antara asupan asam lemak omega-3 dengan CRP pada pasien tumor sistem saraf pusat.

.....Background: Chronic inflammation is associated with tumors and causes poor prognosis in tumor patients. One of the inflammatory markers that increase in tumors is C-Reactive Protein (CRP). CRP levels are elevated in more than 50% of patients with malignancies. Elevated CRP is associated with disease severity in some cancers. One of the nutrients in inflammation is omega-3 fatty acids. Omega-3 fatty acids can increase the formation of specialized pro-resolving mediators (SPM) which function to increase anti-inflammatory mediators, protect the blood brain barrier, reduce pro-inflammatory cytokines, reduce neuron apoptosis. This study aims to assess the relationship between omega-3 fatty acid intake and CRP in patients with central nervous system tumors.

Methods: This cross-sectional study was conducted on subjects aged 18-65 years at Cipto Mangunkusumo Hospital from November to December 2023. CRP measurement using immunoturbidimetric assay method. Omega-3 fatty acid intake was collected using semiquantitative Food Frequency Questionnaire. Bivariate analysis was used to assess the relationship between independent and dependent variables.

Results: From the total 63 research subjects, 35 subjects (55,6%) in the omega-3 fatty acid intake group < 2 g/day and 28 subjects (44,4%) in the omega-3 fatty acid intake group ≥ 2 g/day. The median CRP value was 8.3 (0.6 - 71.5) mg/L. There was no significant relationship ( $p = 0,714$ ) between omega-3 fatty acid intake and CRP in patients with central nervous system tumors.

Conclusion: There is no significant relationship between omega-3 fatty acid intake and CRP in patients with central nervous system tumors.