

Korelasi Asupan Asam Lemak Omega-3 Praoperasi terhadap Perubahan Neutrophil Lymphocytr Ratio Pascapembedahan Laparatomi Elektif = Correlation of Preoperative Omega-3 Fatty Acid Intake on Postoperative Neutrophil Lymphocyte Ratio Changes After Elective Laparotomy Surgery

Dewita Nina Paramita, author

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Abstrak

Latar Belakang: Pembedahan abdomen khususnya laparatomi, merupakan tindakan pembedahan dikaitkan dengan komplikasi inflamasi yang signifikan. Neutrophil Lymphocyte Ratio (NLR) merupakan penanda inflamasi sistemik yang sering digunakan untuk memprediksi komplikasi pascapembedahan. Asam lemak omega-3, seperti EPA (asam eicosapentaenoic) dan DHA (asam docosahexaenoic), diketahui memiliki potensi antiinflamasi yang relevan dalam modulasi inflamasi dengan menurunkan NLR pascapembedahan. Asam lemak omega-3 dapat meningkatkan pembentukan specialized proresolving mediators (SPM) yang bekerja dengan meningkatkan mediator antiinflamasi dan menurunkan sitokin proinflamasi. Penelitian ini bertujuan untuk mengevaluasi korelasi antara asupan omega-3 praoperasi dan perubahan NLR pada pasien pascapembedahan laparatomi elektif.

Metode: Studi penelitian ini menggunakan rancangan penelitian cross-sectional, dilakukan pada 53 subjek dengan rentang usia 18-65 tahun di RSUPN Cipto Mangunkusumo pada bulan Juli hingga November 2024. Asupan asam lemak omega-3 diukur menggunakan repeated 24-hour recall dan semi quantitative-food frequency questionnaire (SQ-FFQ), sementara NLR dihitung dari hasil hitung jenis leukosit pada hari operasi, hari ke-3 pascaoperasi, hari ke-5 pascaoperasi, dan hari ke-7 pascapembedahan.

Hasil: Dari total 53 subjek penelitian, seluruhnya (100%) memiliki asupan asam lemak omega-3 praoperasi < 2 g/hari. Median NLR menunjukkan tren menurun dari hari saat operasi hingga hari ke-7 pascapembedahan. Tidak terdapat korelasi ($p=0,798$) antara asupan omega-3 praoperasi dengan perubahan NLR pascapembedahan laparatomi elektif.

Kesimpulan: Tidak terdapat korelasi antara asupan asam lemak omega-3 praoperasi dengan perubahan NLR pascapembedahan laparatomi elektif.

.....Background: Abdominal surgery, particularly laparotomy, is associated with significant inflammatory complications. The Neutrophil Lymphocyte Ratio (NLR) is a systemic inflammatory marker often used to predict postoperative complications. Omega-3 fatty acids, such as EPA (eicosapentaenoic acid) and DHA (docosahexaenoic acid), are known for their antiinflammatory potential, which is relevant for modulating inflammatory responses by reducing NLR post-surgery. Omega-3 fatty acids enhance the formation of specialized proresolving mediators (SPMs), which act by increasing antiinflammatory mediators and reducing proinflammatory cytokines. This study aimed to evaluate the correlation between preoperative omega-3 intake and changes in NLR in patients undergoing elective laparotomy.

Methods: This cross-sectional study was conducted with 53 subjects aged 18–65 years at Cipto Mangunkusumo National Referral Hospital from July to November 2024. Omega-3 fatty acid intake was measured using repeated 24-hour recalls and a semi-quantitative food frequency questionnaire (SQ-FFQ). Meanwhile, NLR was calculated from leukocyte differential counts taken on the day of surgery, postoperative day 3, postoperative day 5, and postoperative day 7.

Results: Among the 53 subjects, all (100%) had preoperative omega-3 fatty acid intake of less than 2 g/day. The median NLR showed a decreasing trend from the day of surgery to postoperative day 7. However, no correlation was found ($p=0,798$) between preoperative omega-3 intake and changes in NLR following elective laparotomy.

Conclusion: There is no correlation between preoperative omega-3 fatty acid intake and changes in NLR patients undergoing elective laparotomy surgery.