

INTISARI

Latar Belakang: Penyakit Ginjal Kronik (PGK) telah menjadi masalah kesehatan yang sangat besar dengan prevalensi yang terus meningkat dan penyebab kematian nomor 12 di dunia. Pada pasien dengan PGK (terutama pasien dengan Penyakit Ginjal Tahap Akhir (PGTA)), akan terjadi penumpukan zat-zat racun sisa metabolisme di dalam tubuh, salah satunya adalah Interleukin-6 (IL-6). Akumulasi IL-6 dalam tubuh ini akan mempercepat perjalanan klinis dari PGK dan menginisiasi komplikasinya. Saat ini, telah banyak penelitian tentang intervensi dan terapi yang dapat mengurangi kadar IL-6 pada pasien PGK, salah satunya adalah dengan pemberian asam lemak Omega 3. Hanya saja, pemberian suplementasi Omega 3 untuk mengurangi kadar IL-6 pada pasien PGK masih kontroversial. Beberapa penelitian mendukung adanya manfaat pemberian suplementasi tersebut, tetapi beberapa penelitian lain tidak mendapatkan hal yang sama

Tujuan penelitian: Mengetahui pengaruh pemberian asam lemak omega-3 terhadap kadar Interleukin-6 pada pasien PGTA dengan hemodialisis rutin di RSUP Dr Sardjito.

Metode penelitian: Penelitian *Randomized Controlled Trial* tanpa *blinding* pada pasien PGTA berusia > 18 tahun yang menjalani HD rutin di RS Dr Sardjito. Subyek dibagi menjadi dua kelompok yaitu kelompok perlakuan yang mendapat suplemen kapsul minyak ikan 2x1000mg per hari dan kelompok kontrol yang tidak mendapatkan terapi tambahan. Kedua kelompok di *follow up* selama 4 minggu untuk analisis saat ini. Dilakukan pemeriksaan kadar IL-6 menggunakan Human IL-6 FAST ELISA Kit di awal penelitian dan di akhir masa pengamatan.

Hasil: Sebanyak 3 orang mengalami *drop out* dari total 53 subyek sehingga hanya 50 subyek yang dilanjutkan dalam analisis (24 subyek perlakuan dan 26 subyek kontrol). Didapatkan penurunan dari kadar IL-6 di akhir pengamatan dan peningkatan kadar IL-6 akhir pada kelompok kontrol, akan tetapi tidak signifikan secara statistik ($\Delta -0,02$ (-3,16 – 3,020) vs $\Delta 0,032$ (-4,51 – 1,189), $p=0,193$)

Simpulan: Pemberian suplementasi Omega 3 yang berasal dari kapsul minyak ikan 2x1000mg per hari (total 600mg Omega 3) dapat menurunkan kadar Interleukin-6, akan tetapi penurunan ini tidak signifikan secara statistik.

Kata Kunci: Hemodialisis, Minyak Ikan, Omega 3, Interleukin-6

ABSTRACT

Background: Chronic Kidney Disease (CKD) has become a major global health problem, with a steadily increasing prevalence, and is currently the 12th leading cause of death worldwide. In patients with CKD -particularly those with End-Stage Renal Disease (ESRD)- there is accumulation of toxic metabolic waste products in the body, one of which is Interleukin-6 (IL-6). The buildup of IL-6 accelerates CKD progression and triggers its complications. Numerous studies have investigated interventions and therapies aimed at reducing IL-6 levels in CKD patients, including supplementation with omega-3 fatty acids. However, the use of omega-3 supplementation to lower IL-6 levels in CKD patients remains controversial. While some studies support its benefits, others have failed to demonstrate similar effects.

Objective: To evaluate the effect of omega-3 fatty acid supplementation on Interleukin-6 levels in ESRD patients undergoing routine hemodialysis at Dr. Sardjito General Hospital.

Methods: This was an unblinded randomized controlled trial involving ESRD patients aged >18 years receiving regular hemodialysis at Dr. Sardjito Hospital. Subjects were randomized into two groups: a treatment group receiving fish oil capsules (2×1000 mg/day) and a control group receiving no additional therapy. Both groups were followed for four weeks. Serum IL-6 levels were measured at baseline and at the end of the study period using the Human IL-6 FAST ELISA Kit.

Results: Of the 53 subjects enrolled, three dropped out, leaving 50 subjects for analysis (24 in the treatment group and 26 in the control group). At the end of the observation period, the treatment group showed a reduction in IL-6 levels, whereas the control group exhibited an increase. However, these changes were not statistically significant ($\Delta -0.02$ [$-3.16 - 3.020$] vs. $\Delta 0.032$ [$-4.51 - 1.189$], $p = 0.193$).

Conclusion: Supplementation with omega-3 fatty acids derived from fish oil capsules at a dose of 2×1000 mg/day (600 mg omega-3 in total) may reduce IL-6 levels in ESRD patients undergoing routine hemodialysis. However, this reduction was not statistically significant.

Keywords: Hemodialysis, Fish Oil, Omega-3, Interleukin-6