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Effect of a sardine supplement on C-reactive protein in patients receiving hemodialysis

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Objective

The study evaluated the effect of a canned sardine supplement in C-reactive protein (CRP) in patients on hemodialysis (HD) and the compliance and adherence to this supplement.

Design

This was a quasi-experimental study: Participants with a serum CRP of 5 mg/dL or less volunteered to consume a sardine supplement or were maintained on the usual cheese/ham sandwich supplement.

Setting

The study took place in two outpatient dialysis units in Lisbon, Portugal.

Patients

The study comprised 63 patients receiving maintenance HD three times per week for at least 6 months and an initial CRP concentration of 5 mg/dL or less. Exclusion criteria included the presence of graft vascular access or history of cancer.

Intervention

After a 4-week washout period, the nutritional intervention included a canned sardine sandwich for the case group (n = 31) and a cheese or ham sandwich for the control

group (n = 32), to be ingested during each routine HD session, 3 times per week, for 8 weeks.

Main Outcome Measure

Serum levels of high-sensitivity CRP were the outcome measure.

Results

Only 65 patients from the invited 186 patients met the inclusion criteria and agreed to eat the sardine sandwich supplement three times per week and were involved in the study. A significant proportion of 48% (n = 31, case group) consumed the sardine sandwich supplement three times per week for 8 weeks, fulfilling the requirements and completing the study. The present investigation showed that a sardine sandwich supplement had no effect on CRP levels among patients on HD. However, when participants were stratified according to tertiles of CRP distribution values at baseline, a reduction in CRP levels was found for those in the higher tertile, being higher for the case group (P = .047). Although diabetic patients were excluded from the analysis (eight in the sardine supplementation group and seven in the control group) a significant CRP reduction was found (P = .034).

Conclusion

Although a supplement of low-dose n-3 long-chain polyunsaturated fatty acids had no effect on the plasma high-sensitivity CRP of the supplemented group, a reduction in CRP levels was found when patients were stratified for tertiles of CRP (for the upper tertile) and diabetic status (for nondiabetic patients). These findings need to be further confirmed. This canned sardine supplement was accepted by an important proportion of patients, enhancing diet variety and contributing for a greater n-3 long-chain polyunsaturated fatty acids eicosapentaenoic acid and docosahexaenoic acid intake.

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