Effect of fish oil on oxidative stress, lipid profile and renal function in IgA nephropathy.

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The omega-3 polyunsaturated fatty acids in fish oil have been shown to produce beneficial effects, such as a reduction in blood pressure, proteinuria, lipid levels and inflammation. Aggregated immunoglobulin A obtained from IgA nephropathy patients induced greater oxygen free radicals in polymorphonuclear leukocytes than other glomerulopathy. All of which may affect the course of IgA nephropathy. Twenty-three adult patients with biopsy proven IgA nephropathy, with proteinuria more than 1 g/day, serum creatinine less than 3 mg/dl and blood pressure control less than 130/80 mmHg were given omega-3 polyunsaturated fatty acids (PUFA) in the form of an Omacor capsule 4 g/day equivalent to eicosapentaenoic acid (EPA) 1.88 g and docosahexaenoic acid (DHA) 1.48 g for 6 months. A 3 to 6 month follow-up was planned, with monthly evaluations of the patients. By six months, the serum triglyceride was significantly reduced (143.45 +/- 62.65 vs 91 +/- 42.89 mg/dl, p = 0.002), serum cholesterol was also reduced but not statistically significant (234.16 +/- 56.29 vs 219.76 +/- 51.25 mg/dl, p = 0.07). There was a trend of increased serum high density lipoprotein (HDL)-cholesterol (39.26 +/- 10.56 vs 42.72 +/- 8.37 mg/dl, p = 0.056). Urine beta-2-microglobulin was elevated in IgA patients and decreased statistically significant after 3 months (453 +/- 580 vs 308 +/- 274 microg/24 h, p < 0.001) and 6 months of fish oil therapy (453 +/- 580 vs 142 +/- 182, p < 0.03) while urine N-acetyl-glucosaminidase (NAG) was of no significant difference both before and after fish oil administration (21 +/- 10 vs 22 +/- 10 and 21 +/- 9 U/24 h, p = 0.08). Plasma malondialdehyde (MDA), the end product of oxidative stress was statistically, significantly decreased (1.09 +/- 0.51 vs 0.89 +/- 0.49 nmol/L, p = 0.003). The study did not show any change in blood pressure, proteinuria, or serum creatinine. The authors conclude from the results of this study that patients with idiopathic IgA nephropathy with proteinuria and mildly reduced GFR did not benefit from short-term treatment with 4 g per day of omega-3 PUFA regarding the total protein excretion and glomerular filtration rate (GFR), but the advantage was the improvement in tubular dysfunction, lipid profiles, and oxidative stress.