# Highly purified eicosapentaenoic acid attenuates tissue damage in experimental myocardial infarction.

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We examined the effects of dietary supplementation with eicosapentaenoic acid (EPA) on experimental myocardial infarction in dogs. Twenty-five dogs were fed standard diets, 10 of which were supplemented with EPA-ester (100 mg/kg body weight/day) for 8 weeks, while 15 served as controls. After ingesting EPA for 8 weeks, the ratio of EPA to arachidonic acid (AA) in platelet cell membranes significantly increased (from 0.033 to 0.105; $p < 0.01$). The chemotactic response of neutrophils to leukotriene B4 (LTB4) was reduced in the EPA group (34% reduction at 10(-6) M LTB4, $p < 0.01$). Also in the EPA group, the amount of 12-hydroxyeicosatetraenoic acid, one of the chemotactic products of AA in infarcted myocardium, was reduced to 40% ($p < 0.05$). EPA treatment resulted in significant reduction in the ultimate size of the infarcted area. Contractile function of infarcted myocardium was well-preserved in the EPA group. Myeloperoxidase activity, an indication of the infiltration of neutrophils into the infarcted myocardium, was less in the EPA group than in the controls (0.68 +/- 0.25 U/0.1 gr. vs 1.22 +/- 0.55 U/0.1 gr., $p < 0.05$). Therefore, we conclude that dietary supplementation with EPA attenuates ischemic myocardial damage through inhibition of neutrophilic infiltration into the infarcted myocardium.

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