SIGNIFICANT DIFFERENTIAL EFFECTS OF OMEGA-3 FATTY ACIDS AND FENOFIBRATE IN PATIENTS WITH HYPERTRIGLYCERIDEMIA

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Background: Omega-3 fatty acids and fenofibrate are both used to treat patients with hypertriglyceridemia. However, a head-to-head comparison of the lipoprotein and metabolic effects of these two medicines has not been published.

Methods: This was a randomized, single-blind, placebo-controlled, parallel study. Age, sex, and body mass index were matched among groups. All patients were recommended to maintain a low fat diet. Fifty patients in each group were given placebo, omega-3 fatty acids 2 g (most commonly used dosage in Korean patients), or fenofibrate 160 mg, respectively daily for 2 months.

Results: Omega-3 fatty acids therapy decreased triglycerides by 21% and triglycerides/HDL cholesterol and improved flow-mediated dilation (P< 0.01), however, did not significantly change insulin, plasma adiponectin levels, and insulin sensitivity (determined by QUICKI) relative to baseline measurements. Fenofibrate therapy decreased total cholesterol, triglycerides by 29%, and triglycerides/HDL-cholesterol (all P< 0.01) and improved flow-mediated dilation when compared with baseline. When compared with placebo and omega-3 fatty acids, fenofibrate therapy decreased non-HDL cholesterol (P< 0.001) and triglycerides/HDL cholesterol (P=0.016) while increasing HDL cholesterol (P< 0.001) and apolipoprotein Al (P=0.001). Of note, when compared with omega-3 fatty acids, fenofibrate therapy decreased fasting insulin (P=0.023) and increased plasma adiponectin (P=0.002) and insulin sensitivity (P=0.015).

Conclusions: Omega-3 fatty acids and fenofibrate therapy promoted similar changes in triglycerides and endothelium-dependent dilation. However, fenofibrate therapy had substantially better effects on lipoprotein and metabolic profiles in patients with hypertriglyceridemia.