Purpose: This post-hoc analysis compared the lipid-altering efficacy of ezetimibe/simvastatin 10/20 mg (EZ/Simva) versus rosuvastatin 10 mg (Rosuva) in patients stratified by statin potency/dose prior to randomization.
Methods: Patients with elevated low-density lipoprotein cholesterol (LDL-C) despite previous statin treatment (n = 618) were randomized 1:1 to EZ/Simva 10/20 mg or Rosuva 10 mg for 6 weeks. Percent change from baseline in lipids and attainment of lipid targets were assessed within each subgroup (low potency, n = 369; high potency, n = 249). Consistency of the treatment effect across subgroups was evaluated by testing for treatment-by-subgroup interaction. No multiplicity adjustments were made.
Results: Significant treatment-by-subgroup interaction occurred for LDL-C ($P = .013$), total cholesterol ($P = .025$), non-HDL-C ($P = .032$), and apolipoprotein B ($P = .016$) with greater between-treatment differences in favor of EZ/Simva observed in patients from the high potency stratum vs the low potency stratum. Individual and triple target attainment was higher for Eze/Simva compared with Rosuva in both strata.
Conclusions: Compared with Rosuva, switching to EZ/Simva provided greater reductions in LDL-C, total cholesterol, non-HDL-C and apolipoprotein B, and greater target attainment in patients on previous statin treatment, regardless of potency, although patients treated with greater potency statins before randomization resulted in greater between-treatment differences in favor of EZ/Simva.

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Clinical Pharmacist Services Significantly Increase Low-Density Lipoprotein Cholesterol Goal Attainment in an Outpatient-Based Lipid Clinic

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Synopsis: The L-TAP study demonstrated that only 38% of all patients and only 18% of patients with coronary heart disease (CHD) achieved their target low-density lipoprotein cholesterol (LDL-C) goals. Eight years later, the NEPTUNE II study demonstrated increased rates of LDL-C goal attainment to 67% overall. Of that number, 89% of the low-risk patients (0–1 NCEP III risk factors), 76% of moderate to moderately high-risk patients (≥2 risk factors), and 57% of high-risk patients (CHD or CHD risk equivalent) achieved their LDL-C goals. Only 18% of very-high-risk patients achieved their LDL-C goals; however, this was a relatively new concept at the time the NEPTUNE II study was published. Although this is a vast improvement since the L-TAP study, there is still room to do better, especially in our high-risk and very-high-risk patients. Perhaps a collaborative care model with clinical pharmacists can improve LDL-C goal attainment.
Purpose: The purpose of this study is to demonstrate the effectiveness of clinical pharmacists to increase LDL-C goal attainment at all levels of risk in an outpatient-based, pharmacist-run lipid clinic.
Methods: This study was a retrospective chart review of patients who were seen in the lipid clinic from November 2004 to September 2008. Patients were included for analysis if they had more than one lipid clinic visit. Patients were excluded if their medical charts were not available for full review.
Results: Clinical pharmacist management of dyslipidemias resulted in an increase in LDL-C goal attainment from 37.7% to 67.5% ($P < .001$). When stratified according to risk levels, the low risk (n = 9) and moderate to moderately high-risk (n = 22) groups both had a 30% increase in LDL-C goal attainment, but finding this was nonsignificant. The high-risk (n = 90) group increased their LDL-C goal attainment from 46.7% at baseline to 77.8% ($P < .001$), and the very-high-risk (n = 70) group increased their LDL-C goal attainment from 14.3% at baseline to 42.9% ($P < .001$).
Conclusions: Clinical pharmacist management of dyslipidemias resulted in an approximate 30% increase in LDL-C goal attainment across a range of CHD risk levels. The percentage of patients achieving LDL-C goals at various risk levels in this model was greater than those seen in the NEPTUNE II study. A collaborative care approach between physicians and clinical pharmacists to the management of dyslipidemias is an effective approach to provide optimal care to our patients.

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Effects of Vitamin D Supplementation on 25-Hydroxyvitamin D and Markers of Cardiovascular Disease Risk in Subjects with High Waist Circumference

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Synopsis: Observational studies have shown an inverse relationship between circulating 25-hydroxyvitamin D [25(OH)D] and the incidence of cardiovascular disease (CVD), and we recently reported a strong positive relationship between serum 25(OH)D and high-density lipoprotein cholesterol (HDL-C) concentration.
Purpose: The objective of this trial was to assess the effects of a multivitamin and mineral (MVM) supplement, with and without vitamin D (cholecalciferol), on serum 25(OH)D, HDL-C, and other CVD risk markers in subjects with a waist circumference ≥89 cm (women) or ≥102 cm (men). An extension study examined effects of incorporating omega-3 fatty acids and probiotics into the supplement.
Methods: Subjects (n = 60) were randomly assigned a MVM supplement or a MVM supplement plus vitamin D 1200 IU/d (MVM + D) to be taken daily for 8 weeks. After week 8, the MVM + D group took part in the single-blind, open-label extension period for 8 additional weeks during which bifidobacterium longum and lactobacillus acidophilus (500 million colony-forming units/d total),

eicosapentaenoic acid 280 mg/d, and docosahexaenoic acid 180 mg/d were added to the supplement.

Results: Although there was a significant difference in the mean change from baseline in 25(OH)D between the MVM and MVM + D treatment groups (−0.5 ±1.0 ng/mL vs 4.7 ± 1.2 ng/mL, respectively; $P = .003$), 1200 IU/d vitamin D did not increase 25(OH)D concentrations to a desirable level (≥30 ng/mL) in a majority (61%) of participants. Also, there were no significant changes in the fasting lipid profile, high sensitivity C-reactive protein, or resting hemodynamic variables. For subjects who entered the extension, mean HDL-C increased from baseline (7.2 ± 2.3%; $P = .026$), whereas decreases were observed in mean non-HDL-C (−5.7 ± 1.3%; $P = .001$), total cholesterol (−2.9 ± 1.2%; $P = .047$), total cholesterol/HDL ratio (−8.7 ± 1.5%; $P < .0001$), and low-density lipoprotein cholesterol (−4.3 ± 2.0%; $P = .069$).

Conclusions: Consuming a MVM supplement with 1200 IU/d of vitamin D for 8 weeks did not increase serum 25(OH)D concentrations to a desirable level in a majority of these predominantly overweight and obese participants, and did not significantly alter HDL-C or other markers of CVD risk. Preliminary evidence from the extension study suggests that adding low-dose probiotics and omega-3 fatty acids may favorably affect HDL-C and non-HDL-C concentrations.

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Predictors of Anterior and Posterior Wall Carotid Intima Media Thickness Progression in Men and Women at Moderate Risk of Coronary Heart Disease

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Synopsis: Early detection of arterial wall thickening, the subclinical phase of atherosclerosis, may be useful for identifying individuals at risk for future cardiovascular events. Carotid intima media thickness (CIMT)-assessed rate of atherosclerosis progression is a risk factor for clinical cardiovascular events, but the relationships between various coronary heart disease (CHD) risk factors and CIMT progression are unclear.

Purpose: The aim of this study was to investigate associations between CHD risk markers and CIMT progression in individuals at moderate CHD risk.

Methods: Participants included men (45–75 years) and women (55–74 years) in the control arm of a clinical trial. All had at least one major CHD risk factor and baseline posterior CIMT 0.7–2.0 mm, without significant stenosis. Posterior wall (n = 134) and anterior wall with contrast (n = 72) CIMT were assessed by the use of high-resolution B-mode ultrasound at baseline, 12 months and ∼18 months. Fasting lipoprotein lipid, apolipoprotein (apo), inflammatory, and oxidative stress markers were evaluated.

Results: Anterior wall CIMT was significantly greater at baseline than posterior wall CIMT (0.86 vs 0.77 mm, $P < .001$). On average, posterior wall CIMT progressed and anterior wall CIMT regressed (0.0091 vs −0.0164 mm/yr, respectively, $P = .014$). Baseline CIMT was inversely associated ($P < .001$) with CIMT progression in both walls. After adjustment for baseline CIMT, significant predictors of anterior wall CIMT progression in linear regression analyses included triglycerides (TG, $P = .006$), high-density lipoprotein cholesterol (HDL-C, inverse, $P = .006$), and ratios, including total cholesterol (TC)/HDL-C (p=0.013), TG/HDL-C ($P = .005$), and Apo B/HDL-C ($P = .021$). Significant baseline CIMT-adjusted predictors of posterior CIMT progression included TC ($P = .028$), low-density lipoprotein cholesterol (LDL-C, $P = .035$), non-HDL-C ($P = .004$), TG ($P = .016$), apoB ($P = .005$), and ratios of TC/HDL-C ($P < .001$), TG/HDL-C ($P = .015$), apoB/apoA1 ($P = .012$), and apoB/HDL-C ($P = .004$). Oxidative stress and inflammatory markers were generally unrelated to CIMT progression.

Conclusions: The strongest predictors for CIMT progression in anterior and posterior walls were lower baseline CIMT, increased TG, and elevated lipid ratios, including TC/HDL-C, TG/HDL-C, and apoB/HDL-C. Non-HDL-C was a stronger predictor than LDL-C. These results support the hypothesis that TG-rich lipoproteins are associated with CIMT progression, either directly, or as an indicator of a greater number of circulating atherogenic particles.

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Omega-3 Fatty Acid Nutritional Labeling Content of Dietary Fish Oil Supplements: A Systematic Review*

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Synopsis: Prescription grade omega-3 fatty acids (P-OM3 FA) are approved by the Food and Drug Administration (FDA) for the treatment of hypertriglyceridemia (>500 mg/dL). However, not all managed-care organizations have P-OM3 FA on their medication formulary or it may be considered step-therapy where the copayment may be cost-prohibitive for certain patients. Thus, patients are often left to purchase dietary fish oil supplements as a non-FDA approved alternative. The content of EPA and DHA in the dietary fish oil products varies widely and these products are not regulated by the FDA. As a result, patients' lipid responses may be suboptimal due to inadequate doses of EPA and DHA.

Purpose: To conduct a systematic review of dietary fish oil supplements and develop a reference for clinicians to compare different products in terms of EPA and DHA labeled content, daily doses of each product needed to achieve the FDA-approved dose (3360 mg) of combined EPA and DHA in P-OM3 FA and calculate the consequential monthly cost, saturated fat, cholesterol, and vitamin intake at this daily dose.