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EFFECTS OF ROSUVASTATIN AND GEMFIBROZIL ON SMALL DENSE LDL-CHOLESTEROL IN DIABETIC HEMODIALYSIS PATIENTS

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Background/Aim: Small dense-low density lipoprotein cholesterol (sd-LDL-C) is associated with enhanced cardiovascular risk and is often elevated in diabetic chronic hemodialysis (CHD) patients. We tried to determine the effects of rosuvastatin and gemfibrozil on sd-LDL-C and LDL particle size in CHD patients.

Methods: This study was designed as a prospective randomized controlled trial. After a 4-week washout period, fifty four diabetic chronic hemodialysis (CHD) patients with triglycerides (TG)>150 mg/dL were randomized to control group or gemfibrozil group (received 300mg twice a day for eight weeks). Fifty eight diabetic chronic hemodialysis (CHD) patients with LDL-C>100 mg/dL were randomized to control group or rosuvastatin group (received 10mg once daily for eight weeks). Laboratory evaluation was performed at baseline and eight weeks post-treatment. Sd-LDL-C was measured by the Quantimetrix Lipoprint[™]

System LDL Subfraction Kit.

Results: Gemfibrozil reduced TG by 44.9% (p<0.001) and increased HDL-C by 20.4% (p<0.05). Gemfibrozil had no significant effect on LDL-C concentration. However, gemfibrozil decreased sd-LDL-C by 25.0% (p<0.05) and increased lb-LDL-C by 20.8% (p<0.05) and LDL particle size (from 263.2±4.7 Å to 267.4±4.1 Å, p<0.001). Rosuvastatin reduced LDL-C by 43.3% (p<0.001) and decreased both sd-LDL-C (49.0%, p<0.001) and lb-LDL-C (43.8%, p<0.001). Rosuvastatin did not change TG, HDL-C concentrations and LDL particle size.

Conclusion: These results suggest that rosuvastatin reduce all LDL subfractions, including sd-LDL-C and lb-LDL-C, by similar amounts. However, gemfibrozil selectively decrease sd-LDL-C and may induce a shift from small dense LDL particles to larger, more buoyant LDL particles in diabetic chronic hemodialysis (CHD) patients.

Biography

Soomin Jeung is working as a faculty in Department of Internal Medicine at Asan Medical Center, South Korea. Her present research on Diabetic Hemodialysis Patients.

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