LDL Cholesterol Level Alone Does Not Assess Coronary Heart Disease Risk Adequately in Type 2 Diabetes

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Diabetes (2006); 55: Suppl1: A462

Results: Baseline data from the AFORRD (Atorvastatin in Factorial with Omega-3 fatty acids Risk Reduction in Diabetes) trial, a one year study evaluating the extent to which Atorvastatin and/or omega-3 polyunsaturated fatty acids might improve lipid levels and reduce estimated cardiovascular risk, have been used to provide information about the distribution of coronary heart disease (CHD) risk estimates among UK community-based patients with type 2 diabetes (T2DM). 883 patients without known CHD, not on lipid-lowering therapy and with triglycerides <700 mg/dl were recruited from 57 UK general practices. CHD risks were estimated from demographic, clinical and biochemical data using the UKPDS Risk Engine.

The 800 participants randomized had mean (SD) age 63.5 (11.7) years, body mass index 30.8 (6.2) kg/m2, systolic blood pressure 143 (17) mm Hg, HbA1c 6.4 (1.1)% and median (IQR) T2DM duration 4 (2-8) years. 57% were male, 90% Caucasian. Mean LDL cholesterol levels were not different (p=0.49) in recruited patients (120 (36) mg/dl) compared with those not meeting study inclusion criteria (123 (29) mg/dl). Median 10-year CHD risk for all randomized participants was 19.2% (10.8-31.2). In the 22.1% with LDL levels <100 mg/dl (27.5% of men, 15.0% of women) median CHD risk was not significantly different to those with LDL level ≥100 mg/dl (see table).

CHD risk at differing levels of LDL cholesterol

	LDL<100mg/dl	LDL ≥100 mg/dl	
N(%)	177 (22.1%)	623 (87.9%)	
Median (IQR) CHD risk	17.8% (10.1 to 28.5)	19.5% (11.2 to 32.0)	P=0.087
Proportion with CHD risk ≥ 15%	60.5%	63.5%	

Conclusions

CHD risk estimates among a representative group of community-based patients with T2DM vary widely, emphasising the need for individual patient assessment with global risk evaluation tools to help inform appropriate management. Many patients at UK target LDL levels may still be at substantial CHD risk.