



HDL cholesterol is an independent risk factor for progression of subclinical cardiovascular disease

Data from the Atherosclerosis Risk in Communities (ARIC) study were investigated to evaluate the role of HDL cholesterol in progression of subclinical cardiovascular disease, as determined by ultrasound assessment of intima-media thickness (IMT). Results were presented at the American College of Cardiology 56th Annual Scientific Sessions, March 24-27, New Orleans, USA.¹

In total, data for 12,615 subjects with three measurements over 9 years of follow-up were analysed. Data were categorised by baseline HDL cholesterol concentration: <40, 40-49, 50-59 and \geq 60 mg/dL. There was a strong, graded association between HDL cholesterol concentration and IMT progression over time, which remained after adjustment for various factors including LDL cholesterol (Table). After adjustment, each one standard deviation decrease in HDL cholesterol (i.e., decrease of 18 mg/dL) was associated with a 7.4 μ m greater IMT progression per 5-year follow-up period ($p < 0.001$).

The authors concluded that HDL cholesterol may be an important modifiable risk factor for the progression of subclinical cardiovascular disease.

Table. 5-year change in IMT, by HDL cholesterol level

HDL cholesterol (mg/dL)*	IMT (μ m), mean (standard error)
60+	0.0 (reference)
50-59	8.1 (6.0)
40-49	19.1 (5.8)
<40	21.2 (5.9)
p-value (for trend)	<0.001

* Most recent HDL cholesterol value, adjusted for age, sex, race, follow-up time, prevalent CHD at baseline and LDL cholesterol

Reference

1. Astor BC, Lee F, Muntner PM. HDL cholesterol is an independent risk factor for progression of intimal-media thickness: results from the Atherosclerosis Risk in Communities (ARIC) study. *J Am Coll Cardiol* 2007;49 (suppl A): Abstract 1026-35.



More than 50% of patients with non-ST-segment elevation acute coronary syndromes have low HDL cholesterol

Researchers investigated the prevalence of low HDL cholesterol among patients with non-ST-segment elevation acute coronary syndromes (NSTEMI ACS) included in the CRUSADE initiative. Results were presented at the American College of Cardiology 56th Annual Scientific Sessions, March 24-27, New Orleans, USA.¹

Of 93,263 patients with NSTEMI included in the analysis, 52.6% had low HDL cholesterol levels (<40 mg/dL). Nearly one-fifth of patients (18.1%) had very low HDL cholesterol (10-30 mg/dL). These patients were more likely to be younger, male, with features of the metabolic syndrome and had a higher risk of in-hospital mortality (Table).

The authors concluded that strategies designed to raise HDL cholesterol levels warrant further exploration in these high-risk patients.

Table. Clinical characteristic and in-hospital mortality by HDL cholesterol

	10-30 mg/dL	30-40 mg/dL	40-60 mg/dL	60-100 mg/dL
Age (years)*	62 (52 to 74)	64 (54 to 75)	68 (57 to 78)	72 (60 to 81)
% Female	23.0	29.7	46.6	65.5
Median BMI*	29 (26 to 33)	29 (25 to 33)	27 (24 to 32)	26 (22 to 30)
% Diabetic	36.8	32.6	28.8	24.0
Triglycerides (mg/dL)*	163 (111 to 253)	142 (100 to 208)	111 (78 to 161)	86 (62 to 122)
LDL (mg/dL)	92 (68 to 118)	101 (78 to 128)	103 (79 to 131)	98 (74 to 126)
In-hospital mortality	2.9%	2.4%	2.7%	3.4%

* median (interquartile range)

Reference

1. Roe MT, Ou F-S, Ohman M et al. Patterns of HDL levels in patients with non-ST-segment elevation acute coronary syndromes and association with clinical outcomes. J Am Coll Cardiol 2007;49 (suppl A): Abstract 1014-122.



Low HDL cholesterol is common in patients with CHD or CHD risk equivalents on statin therapy

Although treatment guidelines focus on lowering LDL cholesterol, they also identify HDL cholesterol as an important independent risk factor for coronary heart disease (CHD). However, the prevalence of low HDL cholesterol among ambulatory patients with CHD or CHD risk equivalents, as stipulated in guidelines¹, and well controlled LDL cholesterol remains unclear. Researchers addressed this issue and presented results at the American College of Cardiology 56th Annual Scientific Sessions, March 24-27, New Orleans, USA.¹

A total of 1,512 patients with CHD or a CHD risk equivalent (diabetes, peripheral vascular disease, abdominal aortic aneurysm or carotid artery disease complicated by stroke or transient ischaemic attack) were identified from electronic medical records of a large adult primary care clinic. Patients were categorised by LDL cholesterol, as > 100 mg/dL, 71-100 mg/dL or ≤ 70 mg/dL. Low HDL cholesterol was defined as < 40 mg/dL in men and < 50 mg/dL in women.

Overall, the majority of patients (66%) had low HDL cholesterol. Compared with patients with optimal HDL cholesterol levels, those with low HDL cholesterol tended to be younger and were more likely to be female, and have diabetes or hypertension. Low HDL cholesterol was prevalent across all levels of LDL cholesterol, and was highest in patients with the lowest LDL cholesterol levels (79%, versus 66% in patients with LDL cholesterol 71-100 mg/dL and 64% in patients with LDL cholesterol > 100 mg/dL). Overall, 67% of patients on statin therapy had low HDL cholesterol. Very few patients (<5%) were receiving either niacin (nicotinic acid) or a fibrate.

The authors concluded that low HDL cholesterol was prevalent in patients with CHD or CHD risk equivalents, irrespective of statin use. Treatments to raise HDL cholesterol were underused. This patient group represents a large unmet opportunity for further CHD prevention.

References

1. Executive Summary of the Third Report of the National Cholesterol Education Program (NCEP) Expert Panel on detection, evaluation, and treatment of high cholesterol in adults (Adult Treatment Panel III). JAMA 2001;285:2486-97.
2. Alsheikh-Ali A, Karas RH, Kuvin JT et al. J Am Coll Cardiol 2007;49 (suppl A):Abstract 1020-162.