The Gap between Treatment Guidelines and Routine Care Treatment Patterns in the Management of High Risk Patients: Findings from the DETECT Study

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INTRODUCTION:

Numerous approaches to the primary and secondary prevention of cardiovascular diseases have been introduced in clinical routine care. Yet, according to recent large-scale studies, only a fraction of the patients needing treatment in primary care seem to be recognized and receive adequate treatment. The epidemiological study **DETECT** (**D**iabetes **C**ardiovascular **R**isk **E**valuation: **T**argets and **E**ssential Data for **C**ommitment of **T**reatment) was launched to identify the reasons, the extent and the short-term consequences of unmet needs in patients with high cardiovascular risk.

Aims of the study were to assess (a) the frequency, characteristics and severity of coronary heart disease, arterial hypertension, diabetes mellitus, lipid disorders and selected comorbidities, (b) the proportion of patients with high-risk (c) rates of General Practitioner´s recognition, diagnoses and therapy, (d) quality of care (e) indicators of undertreatment, or over-treatment, respectively, and (e) to evaluate current laboratory measures.

Here, we report on the findings from 7500 patients with focus on the risk assessments and treatment modalities of lipid disorders in patients with coronary heart disease (CHD) and/or type 2 diabetes mellitus (DM).

METHODS:

Study design:
DETECT is a large multistage cross-sectional and prospective 12-month study in over 3000 primary care offices, nationwide. In stage 1, a mailed questionnaire survey of physicians (n = 3,572) and settings was performed to assess physicians´ awareness, attitudes, and practice patterns concerning coronary heart disease, arterial hypertension, diabetes mellitus, lipid disorders etc. In stage 2, a cross sectional study of consecutive patients (n = 70,000 patients) in these primary care settings was completed using standardized questionnaires for physicians and patients. In stage 3, a subset of 7,500 patients characterized by an extensive standardized laboratory program, are being followed up over 12 months to evaluate the change of selected laboratory measures and critical outcomes such as death, cardiovascular events or hospitalisation.

Patients:
CHD risk categories and metabolic syndrome were determined according to the National Cholesterol Education Program (NCEP) ATPIII Guidelines. Ten-year risk was calculated according to the Procam risk score. Type 2 diabetes was assessed according to the guidelines of the American Diabetes Association (ADA).

Lipids and lipoproteins:
Cholesterol and triglycerides were measured using enzymatic methods and reagents from Roche Diagnostics (Mannheim, Germany). The lipid measurements were calibrated using secondary standards for automated analysers (Roche Diagnostics). LDL cholesterol was determined by quantitative agarose gel electrophoresis (Helena, Germany).

RESULTS:

In 7376 out of 7504 patients in step 3 of the study lipid and lipoprotein analysis were performed (see Table 1 for the demographic characteristics). The frequencies of CHD, type 2 diabetes and the metabolic syndrome were 13.6 %, 19.7 %, and 37.6 %, respectively.

Table 1: Demographic and characteristis

	Females n = 4352 (59 %)	Males n = 3024 (41 %)
Age, years (mean)	57	59
Smokers, n (%)	829 (19.0)	655 (21.7)
Weight, kg (mean ± SD)	71.7 ± 14.5	86.1 ± 14.4
Hip, cm (mean ± SD)	104 ± 14	106 ± 11
Waist, cm (mean ± SD)	90 ±15	102 ± 13

CONCLUSION:

The proportion of patients reaching LDL-C targets is lowest in patients at highest risk of CHD and highest in patients at low risk.

Only half of the patients with CHD, one third of the patients with type 2 diabetes and only one quarter of patients with a global ten-years risk > 20 % receive lipid lowering drugs.

The physicians´ awareness of the patients´ individual target value is closer to NCEP targets than actual LDL-C concentrations.

Undertreatment therefore may not be due to lacking physicians´ awareness of therapeutic needs, but due to pressure built up by healthcare authorities.

RESULTS:

According to the NCEP ATPIII guidelines the majority of the patients (52.6 %) was in the category with a high risk for CHD. More than 78 % of these patients did not achieve the goal for LDL cholesterol (< 100 mg/dL) (Figure 1).

Figure 1:

How many patients achieved goal for LDL cholesterol? Risk Categories
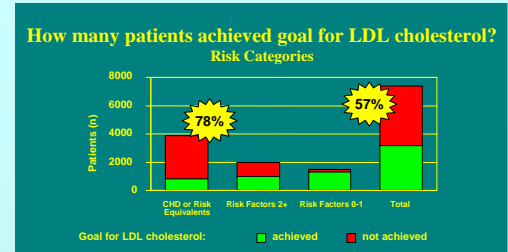
Lipid lowering drug therapy and/or therapeutic lifestyle changes was insufficient in patients with CHD and type 2 diabetes (Figure 2.)

Figure 2:

How many patients achieved goal for LDL cholesterol? CHD – type 2 diabetes – metabolic syndrome
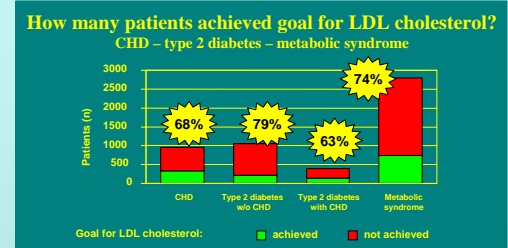
In 66 % of the cases where the patients did not achieve their goal for LDL cholesterol, the physicians' assessment corresponds to the risk category according to the ATPIII guidelines (Table 2). However, the risk assessment by the physicians is better in patients at low risk compared to patients with high risk. The median LDL goals according to the physicians is very similar in all risk categories suggesting that the risk stratification according to the ATPIII guidelines is used inadequately (Table 2).

Table 2: If LDL cholesterol goals were not achieved, is the physicians' assessment appropriate?

Risk Category	LDL goal according to physician (mg/dL)[1]	Physicians assessment corresponds to risk score[2]	
		yes, n (%)	no, n (%)
CHD or CHD Risk Equivalents (10-year risk > 20%)	116 (100 / 135)	1845 (60.5)	1204 (39.5)
Risk Factors 2+ (10-year risk ≤ 20%)	130 (105 / 150)	766 (77.5)	223 (22.5)
Risk Factor 0-1	130 (110 / 150)	179 (98.4)	3 (1.6)
All patients		2790 (66.1)	1430 (33.9)

[1]All patients (n = 7376); [2]Patients not achieved their LDL cholesterol goal (n = 4220); [3]values are medians and 25th and 75th percentile.

The frequency of lipid lowering therapy was 17 % (statins: 82 %, fibrates: 10 %, other: 8 %). Even in patients with CHD and/or type 2 diabetes the majority were not treated with lipid lowering drugs (Figure 3).

Figure 3:

Lipid lowering therapy?