

ESC Prevention of Cardiovascular Disease Programme

November 2019

Report on unmet prevention needs: Dyslipidaemia

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Report produced within the framework of the ESC Prevention of Cardiovascular Disease Programme, led by the European Association of Preventive Cardiology (EAPC) in collaboration with the Acute Cardiovascular Care Association (Acca) and the Association of Cardiovascular Nursing and Allied Professions (ACNAP).

Aim: To report the prevalence of dyslipidaemia, the percentage usage of lipid-lowering drugs and the percentage of high-risk cardiac patients who achieve the recommended LDL cholesterol target level in Europe.

Methods: Population inclusion criteria were high-risk CVD patient, from any country in Europe. Studies were included if they reported prevalence of dyslipidaemia or percentage of: 1) usage of lipid-lowering drugs; 2) patients achieving the recommended cholesterol LDL level (<1.8 mmol/l or <70 mg/dL for high-risk CVD patients).

Sources: PubMed-listed publications with a publication date between 2010-2019 were included. Timmis et al. was excluded as there were no high-risk patients. The WHO report did not provide the required data. Data presented from EUROASPIRE V was from the hospital arm (patients with coronary artery disease presentation) as presented by De Bacquer at EuroPrevent 2018 and two recent publications [1-3]. Data from SURF I was derived from Zhao et al. [4]. Other country-specific data was also included [5-13].

Results: Patients within the studies had varying types of cardiac disease. EUROASPIRE V hospital arm and SURF I populations were described as coronary heart disease (CHD) patients. Gitt et al. (2016) had very high-risk patients (patients diagnosed with CHD, diabetes, chronic kidney disease and/or peripheral artery disease), Ferrieres et al. (2018) had patients with CHD and survivors of acute coronary syndrome, Lang et al. (2017) had stable CAD patients (defined as prior myocardial infarction or revascularization (CABG or PCI), coronary stenosis of more than 50% by coronary angiography or chest pain with myocardial ischemia), Puymirat et al. (2017) had acute myocardial infarction (AMI) patients, Sverre et al. (2017) had AMI patients and/or patients after revascularization, Gitsels et al. (2017) had AMI patients, Radovanovic et al. (2017) had STEMI patients, Kirchberger et al. (2014) had first-time AMI patients, and Gho et al. (2017) had patients with heart failure after STEMI.

Data from SURF I were available for only 8 European countries (non-European countries were excluded). High prevalence of dyslipidaemia was reported among European countries (overall 68.7%), which varies from 31.9% in Croatia to 81.2% in Belgium. Researchers reported high overall usage of lipid-lowering drugs (statins 86.8% and other lipid-lowering drugs 10%). The LDL cholesterol target 1.8 mmol/l was achieved in 32.9% of patients among Europe which is comparable with EUROASPIRE V results.

Data from EUROASPIRE V (hospital arm) were available for 25 European countries (2 non-European countries were excluded). The study reported a high overall usage of lipid-lowering drugs which was at the level of 84.2% (statins 80%, cholesterol absorption inhibitors 2.7%, fixed dose combinations 2.6%, fibrates 1.4%, and others 0.26%) and low overall percentage (32%) of patients achieving target cholesterol LDL levels, despite lipid-lowering therapy. About half of the patients (51.3% of men; 46.0% of women) were on a high-intensity lipid lowering therapy which was defined as daily dosages that are on average associated with a reduction of LDL-C of at least 50%. On the question "how often they took their lipid lowering drugs as prescribed by their doctor", 92% answered all or nearly all of the time, a proportion that varied between countries from 70 to 98%. 25% of patients after hospital discharge did not take, discontinued or reduced doses of lipid-lowering medicines. The results of the EUROASPIRE V survey clearly demonstrate that most patients with established coronary artery disease have suboptimal lipid management.

The DYSIS study presented a large data set containing information on patients from 30 countries across Europe, the Middle East, Canada, Africa, and Asia who were at risk for cardiovascular events and on chronic statin therapy. The DYSIS study showed that among 44'015 patients with a very high risk in Europe only 19.1% achieved the recommended LDL cholesterol target level (70mg/L). This result is even less optimistic than reported in both SURF I and EUROASPIRE V.

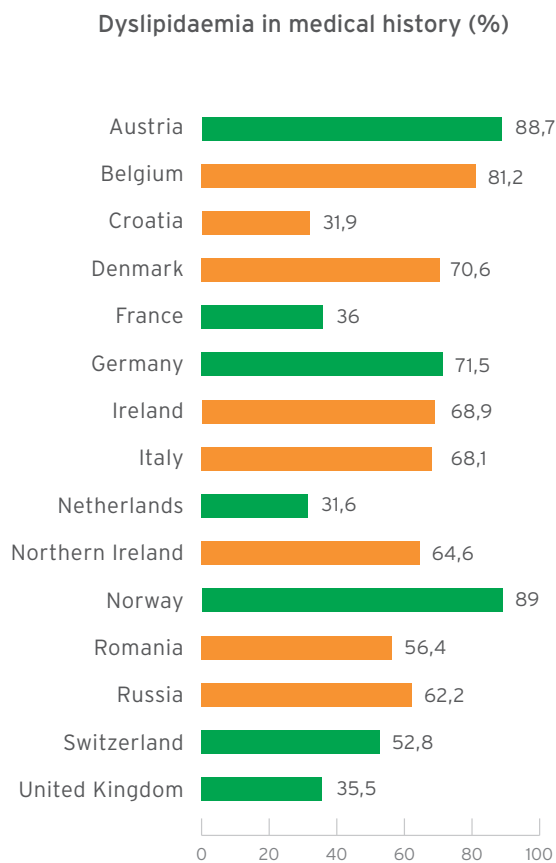
The DYSIS II Europe study which included patients with coronary heart disease (CHD) and survivors of acute coronary syndrome (ACS) from 7 European countries (Belgium, France, Germany, Greece, Ireland, Italy, and Russia) showed that only 28.3% of CHD patients and 15.7% of ACS patients had attained the target LDL cholesterol level of <70 mg/dL.

Prevalence of dyslipidaemia in medical history of high-risk CVD patients among European countries is presented on Figure 1. Percentage of patients achieving the recommended cholesterol LDL target level across European countries is presented on Figure 2.

- 1) SURF I: only 32.9% of patients achieve <1.8 mmol/l LDL cholesterol target level despite high overall usage of lipid-lowering drugs (statins 86.8% and other lipid lowering drugs 10%).
- 2) EUROASPIRE V (hospital arm): only 32% of patients achieving <1.8 mmol/l LDL cholesterol level despite high overall percentage usage of lipid-lowering drugs (84%).
- 3) DYSIS study reported that only 19.1% of very high-risk patients achieved the recommended LDL cholesterol target level.
- 4) DYSIS II Europe study reported that despite the widespread use of lipid-lowering therapy throughout Europe, attainment of the target LDL-C value <70 mg/dL in these very high-risk patients remains poor.

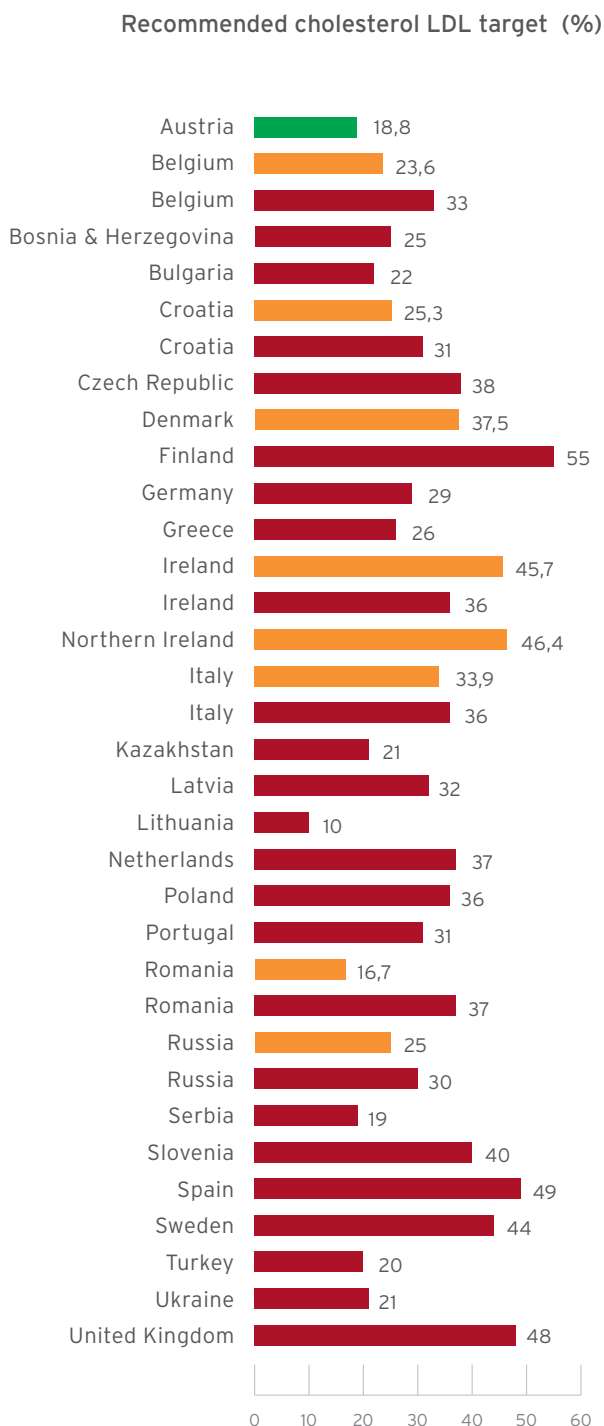
Conclusion: There are relevant discrepancies in the prevalence of dyslipidaemia between European countries and among different high-risk populations. Control of dyslipidaemia in patients with high CVD risk is insufficient and lipid lowering drugs dosage seems to be suboptimal despite their widespread use.

Figure 1: Prevalence of dyslipidaemia in medical history of CVD patients among European countries.



Source: SURF (orange), Other (green)

Figure 2: Percentage of patients achieving the recommended cholesterol LDL target level across European countries.



Source: EUROASPIRE (dark red), SURF (orange), Other (green)

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The ESC Prevention of CVD programme is supported by Amgen, AstraZeneca, Ferrer, and Sanofi and Regeneron in the form of educational grants.

