



# Lipid Abnormalities Remain High among Treated Hypertensive Patients with Stable CHD: Results of the Dyslipidemia International Study (DYSIS) II Belgium

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# Introduction

- Despite treatment with lipid lowering therapy (LLT), elevated lipid abnormalities persist among hypertensive patients with coronary heart disease (CHD), further increasing their future cardiovascular risk.
- Both hypertension and hyperlipidemia are very frequent comorbidities among CHD patients and therefore control of both should be targeted.
- We aimed to identify the prevalence of lipid abnormalities and unmet needs among hypertensive patients with stable CHD in Belgium currently receiving LLT.

# Methods

- DYSIS II is a multicenter, observational cross-sectional study conducted from May 2013 to September 2013 in 10 outpatient care centers in Belgium.
- Patients were identified as having hypertension based on data collected through the study case report form.
- Patient characteristics, risk factors, treatment patterns, and laboratory values were collected.
- Lipid target achievement for low-density lipoprotein cholesterol (LDL-C) was assessed based on ESC/EAS guidelines<sup>1</sup>, which recommend an LDL-C < 70 mg/dl for very high risk patients.

# Inclusion criteria

- Documented CHD by one or more of the following:
  - coronary angiography (stenosis > 50%)
  - cardiac computed tomography (stenosis > 50%)
  - prior percutaneous coronary intervention (PCI)
  - prior coronary artery bypass graft (CABG)
  - history of acute coronary syndrome (ACS)  $\geq$  3 months prior to enrollment
- Documented hypertension by one or more of the following:
  - currently on anti-hypertensive therapy
  - previously diagnosed with hypertension
  - blood pressure > 140 mmHg systolic and/or > 90 mmHG diastolic
- Complete fasting lipid profile 0-12 months prior to enrollment performed while on LLT for  $\geq$  3 months
- No history of ACS within 3 months prior to enrollment
- Age  $\geq$  18 years
- Written informed consent for participation obtained from the subject or the subject's legal acceptable representative
- Not participating in randomized clinical trials involving medication at time of enrollment

# Results

# Table 1: Patient characteristics among stable CHD patients currently on LLT

	All patients n=387	Hypertensive patients n=265	Non-hypertensive patients n=122
Age [years, mean $\pm$ SD]	69.7 $\pm$ 10.1	70.3 $\pm$ 9.5	68.3 $\pm$ 11.3
Males	80.6%	80.4%	81.1%
BMI > 30 kg/m <sup>2</sup>	30.5%	34.3%	22.1%
History of ACS, MI, UA	60.7%	59.2%	63.9%
Type 2 diabetes mellitus	40.1%	47.5%	23.8%
Chronic kidney disease	11.9%	14.0%	7.4%
Family history of CHD	50.9%	51.2%	50.4%
Sedentary lifestyle	50.1%	56.7%	36.4%
Current smoker	9.8%	9.8%	9.8%
Former smoker	50.9%	50.2%	52.5%
Previous PCI or CABG	89.1%	87.9%	91.8%
BP <140/<90 mmHg	52.7%	50.9%	56.6%

BMI: body mass index; ACS: acute coronary syndrome; MI: myocardial infarction; UA: unstable angina; PCI: percutaneous cardiac intervention; CABG: coronary artery bypass graft; BP: blood pressure

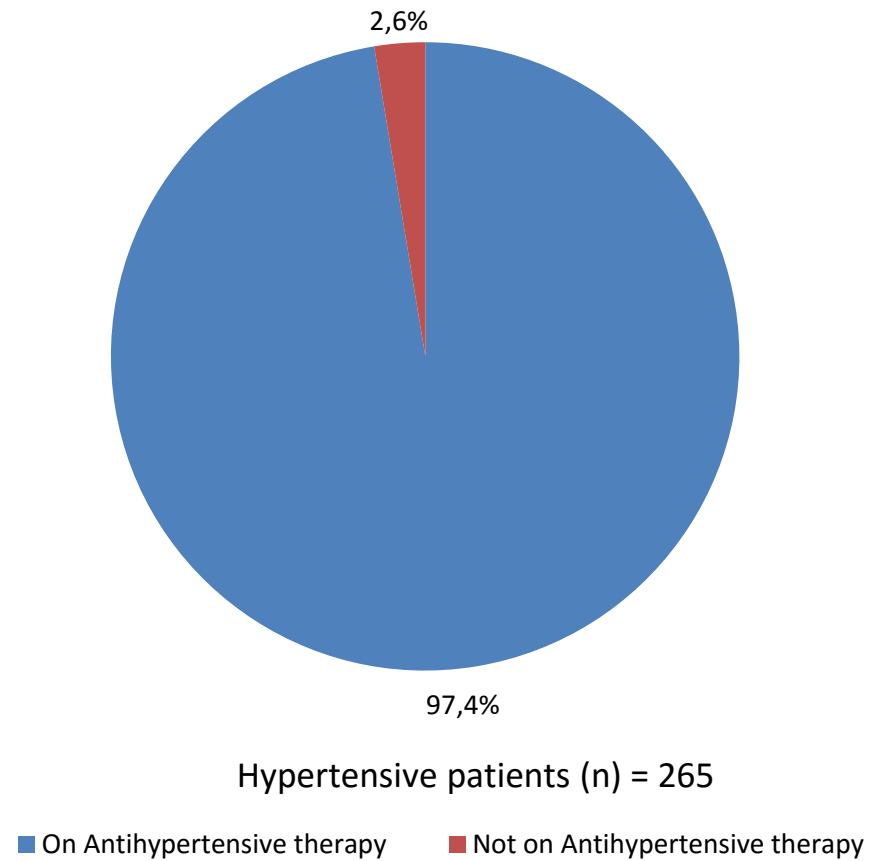
## Table 2: Mean lipid profile

	All patients n=387	Hypertensive patients n=265	Non-hypertensive patients n=122
Total Cholesterol [mg/dl]	152.4 ± 34.3	150.2 ± 33.1	157.2 ± 36.5
LDL-Cholesterol [mg/dl]	77.4 ± 28.2	75.2 ± 24.6	82.3 ± 34.3
HDL-Cholesterol [mg/dl]	49.5 ± 14.4	48.8 ± 14.0	51.1 ± 15.0
Triglycerides [mg/dl]	131.8 ± 88.1	135.2 ± 98.1	124.3 ± 60.8
Non-HDL-Cholesterol [mg/dl]	102.9 ± 33.8	101.4 ± 32.6	106.1 ± 36.2

Results provided as mean ± SD

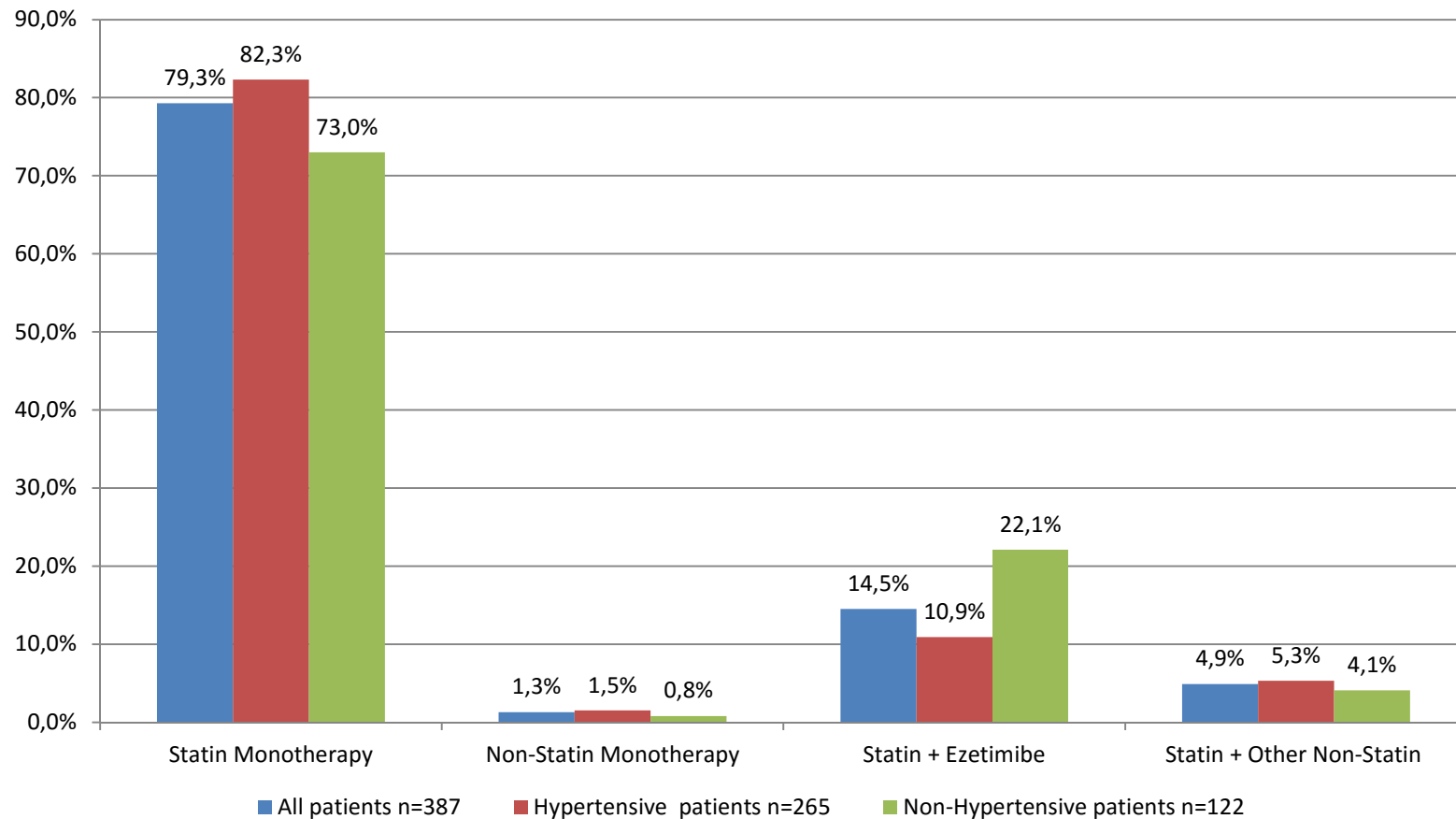
LDL: low density lipoprotein; HDL: high density lipoprotein

# Figure 1: Proportion of hypertensive patients on antihypertensive therapy





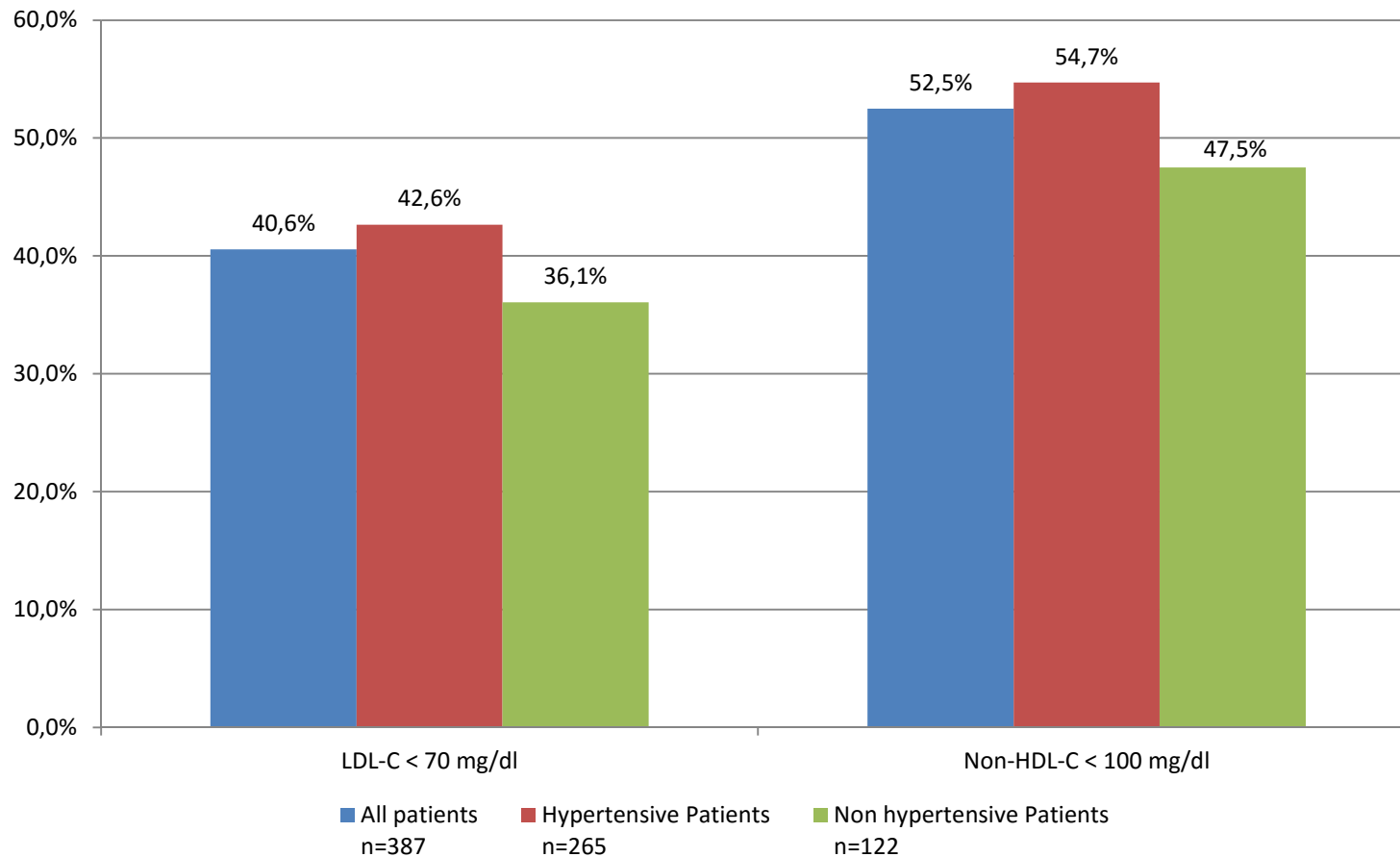
# Figure 2: Lipid lowering therapies among stable CHD patients



Other non-statin includes fibrates, omega 3 fatty acids, and other (not specified)

Mean atorvastatin equivalent dose:  $28 \pm 21$  mg/day (all patients),  $28 \pm 22$  mg/day (hypertensive patients) and  $27 \pm 18$  mg/day (non-hypertensive patients)

# Figure 3: Lipid target achievement



# Conclusion

- Overall, mean LDL-C values were approximately 5.2 mg/dl from recommended LDL-C target, with about 57% of LLT treated hypertensive stable CHD patients in Belgium not achieving the recommended target while primarily on statin monotherapy.
- Additional effective lipid lowering strategies are needed among these very high risk patients to prevent future cardiovascular events.

# References

1. European Association for Cardiovascular Prevention and Rehabilitation, Reiner, Z., Catapano, A. L., De Backer, G., Graham, I., et al . Committees. (2011). ESC/EAS guidelines for the management of dyslipidemias: the Task Force for the management of dyslipidemias of the European Society of Cardiology (ESC) and the European Atherosclerosis Society (EAS). *Eur Heart J*, 32(14), 1769-1818.

# Disclosures

- DYSIS II study was funded by Merck & Co., Inc.
- AKG received honoraria from Merck & Co., Inc. for participation in DYSIS II scientific committee meetings
- VA, DL, BA are employed by Merck & Co., Inc./MSD
- **MG, EW, JDS, JPS, RPR**, MH nothing to disclose