

# What are the MAIN Barriers for Achieving Low Density Lipoprotein Cholesterol Goals in Post-Myocardial Infarction Patients?

## Perspectives from Physicians in SIX European Countries

Nadeem Qureshi<sup>1</sup>, Jan H. Cornel<sup>2</sup>, Francois Schiele<sup>3</sup>, Pasquale Perrone-Filardi<sup>4</sup>, Johannes Brachmann<sup>5</sup>, Eduard Sidelnikov<sup>6</sup>, Guillermo Villa<sup>6</sup>, Jose R. Gonzalez-Juanatey<sup>7</sup>

<sup>1</sup>University of Nottingham, Nottingham, United Kingdom; <sup>2</sup>Radboud University Medical Center, Nijmegen, Netherlands; <sup>3</sup>Regional University Hospital Jean Minjoz, Besancon, France; <sup>4</sup>Federico II University Hospital, Naples, Italy; <sup>5</sup>Regiomed-Kliniken, Coburg, Germany; <sup>6</sup>Amgen (Europe) GmbH, Rotkreuz, Switzerland; <sup>7</sup>Hospital Clínico Universitario de Santiago de Compostela, Santiago de Compostela, Spain

### INTRODUCTION

- Elevated low density lipoprotein cholesterol (LDL-C) is one of the key causal modifiable factors for myocardial infarction (MI).<sup>1</sup> Statins and high-intensity lipid lowering therapy (LLT) should be started in post-MI patients as early as possible to produce early and sustained clinical benefits<sup>2-5</sup>
- For post-MI patients, 2019 European Society of Cardiology and European Atherosclerosis Society (ESC/EAS) guidelines recommend targeting LDL-C levels below 1.4 mmol/L (55 mg/dL) and at least a 50% reduction from baseline<sup>6</sup>
- According to the guidelines patients who do not achieve the recommended treatment goals, despite maximally tolerated statin therapy, should be prescribed supplemental LLT, such as ezetimibe or proprotein convertase subtilisin/kexin type 9 inhibitors (PCSK9i)<sup>2,7</sup>
- Target LDL-C levels in post-MI patients often remain above the 2019 ESC/EAS guideline goals, despite treatment with statins and/or ezetimibe<sup>7,8</sup>

### OBJECTIVE

- Describe, from the physicians' perspective, the main barriers for achieving LDL-C goals in post-MI patients in Europe

### METHODS

- A web-based cross-sectional survey was conducted between Dec 2019 and Jun 2020 in 6 European countries: France, Germany, Italy, the Netherlands, Spain, and United Kingdom (UK). A total of 360 primary (PCPs) and secondary care physicians (SCPs) were surveyed (60 respondents per country stratified by specialty); and described their perspectives around treating post-MI patients
- The survey respondents could be:
  - SCPs: hospital-based cardiologists or (Germany only) cardiac rehabilitation specialists (working in a rehabilitation centre for 20% or more of their time), practicing for at least 2 years since completion of specialty training, who had managed at least 20 post-MI patients in hospital in the previous 2 months
  - PCPs: general practitioners or office-based cardiologists, practicing for at least 2 years, who had been involved in the care of at least 4 post-MI patients in the previous year

- The survey questionnaire included closed questions whenever possible permitting respondents to answer only within a pre-specified range of options
- Respondents were not asked to consult medical records and, where appropriate, were prompted to limit responses to patients seen over the preceding 2 months.

### REFERENCES

- 1.Ference B, et al. Eur Heart J 2017;38:2459–72.
- 2.Baigent C, et al. Lancet 2005;366:1267–78.
- 3.Knuuti J, et al. Eur Heart J 2020;41:407–77.
- 4.Danchin N, et al. In. *ESC Congress 2020 - The digital experience*; 2020.
- 5.Schubert J, et al. Eur Heart J 2020;42:243–52.
- 6.Mach F, et al. Eur Heart J 2020;41:111–88.
- 7.Drexel H, et al. Eur Heart J Cardiovasc Pharmacother 2020;6:115–21.
- 8.Saborowski M, et al. Cardiology Journal 2018;25:32–41.

Table 1. The four most important barriers to achieving LDL-C goals in post-MI patients (ranks)<sup>1</sup>

| Factor                                                             | PCP |    |    |    |    |    | SCP |    |    |    |    |    |
|--------------------------------------------------------------------|-----|----|----|----|----|----|-----|----|----|----|----|----|
|                                                                    | FR  | DE | IT | NL | ES | UK | FR  | DE | IT | NL | ES | UK |
| Poor adherence to LLTs                                             | 3   | 1  | 2  | 2  | 1  | 2  | 2   | 1  | 2  | 2  | 1  | 1  |
| Lack of education about LDL-C/lifestyle/diet <sup>2</sup>          | 1   | 2  | 1  | 4  | 2  | 1  | 3   | 2  | 1  | 4  | 1  | 2  |
| AEs of LLTs                                                        | 2   | 3  | 3  | 1  | 3  | 3  | 1   | 2  | 3  | 1  | 3  | 3  |
| Lack of availability of sufficiently potent lipid lowering therapy | 4   | 4  | 4  | 3  | 4  | 4  | 4   | 4  | 4  | 3  | 4  | 4  |

<sup>1</sup>Results are ranked according to the order of proportions for each factor in a country for the four selected key factors, for both PCP and SCP respondents. Other barriers that were assessed included: not attending cardiac rehabilitation; “no barriers” and “other”.

<sup>2</sup>Lack of education on the link between lifestyle, diet choices and changes, and the anticipated effect on LDL-C levels

AE, adverse events; DE, Germany; ES, Spain; FR, France; IT, Italy; LDL-C, low density lipoprotein cholesterol; LLT, lipid lowering therapies; NL, the Netherlands; PCP, primary care physician;

SCP, secondary care physician; UK, United Kingdom

Figure 1. PCPs overall are not satisfied with the secondary care serum lipid information received

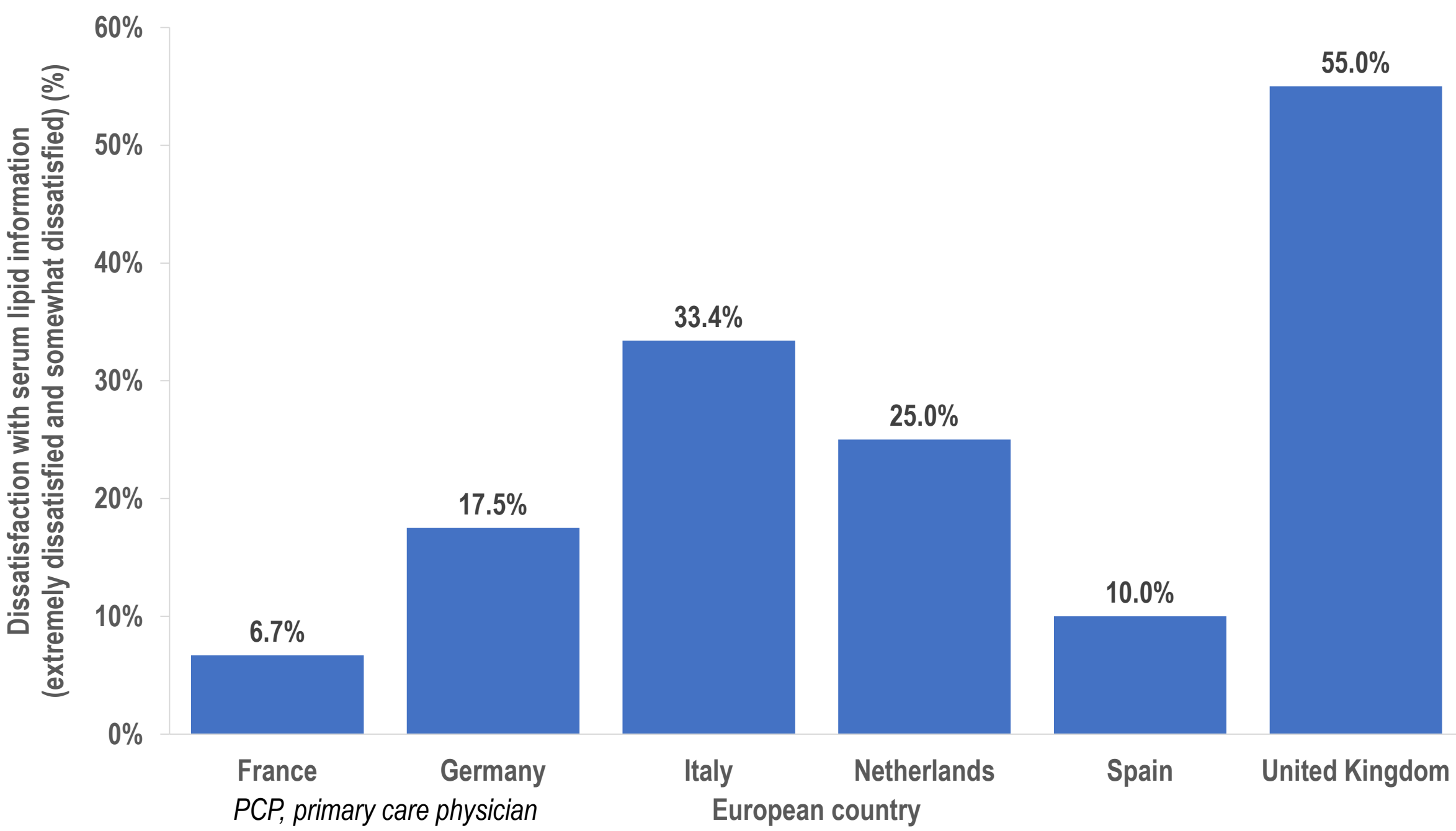


Figure 2. The majority of physicians do not receive future lipid management plans in the MI patient discharge summaries

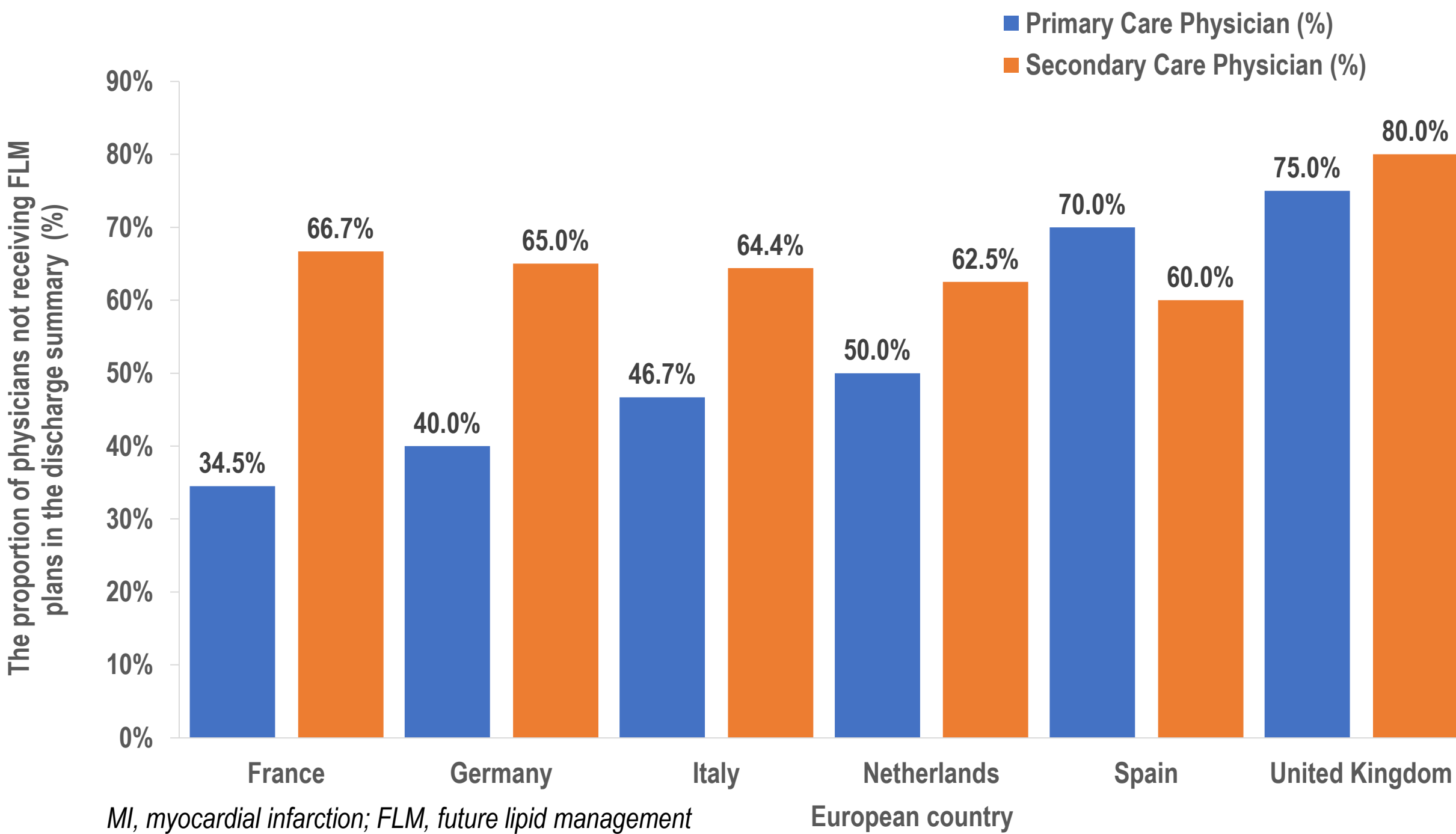


Table 2. The seven most important pieces of information identified by PCPs in European countries as missing from the discharge summary and should be included (ranks)

| Item                                                | FR | DE | IT | NL | ES | UK |
|-----------------------------------------------------|----|----|----|----|----|----|
| Future lipid management plans                       | 3  | 2  | 1  | 2  | 1  | 2  |
| Target serum lipid levels                           | 3  | 6  | 3  | 5  | 1  | 1  |
| Planned lipid lowering therapy titrations           | 6  | 1  | 1  | 3  | 7  | 3  |
| Lipid lowering therapy sequencing/treatment options | 2  | 5  | 4  | 1  | 5  | 5  |
| Frequency of follow-up or review visits             | 1  | 3  | 6  | 5  | 5  | 3  |
| Cardiac rehabilitation referral                     | 3  | 6  | 7  | 5  | 3  | 7  |
| Advice on secondary prevention                      | 6  | 4  | 4  | 3  | 3  | 6  |

<sup>1</sup>. Other pieces of information which were assessed: confirmation of diagnosis of acute MI; clinical details of the acute MI episode; total cholesterol test results; non-HDL test results; LDL-C test results; “other” DE, Germany; ES, Spain; FR, France; IT, Italy; NL, the Netherlands; UK, United Kingdom

### RESULTS

- Of 360 physicians surveyed, 64.7% were SCPs and 35.3% were PCPs
- Poor adherence was consistently named among the top 2 barriers by both PCPs and SCPs in all participating countries (except for French PCPs). Lack of education was considered the most important barrier by PCPs in France, Italy, and the UK and SCPs in Italy and Spain. Dutch physicians and French SCPs indicated that Adverse Events of LLT was the most important barrier precluding patients from reaching their LDL-C goals (Table 1).
- Proportions of PCPs who were dissatisfied with information received from cardiologists regarding lipid management varied greatly: the highest proportions of dissatisfied PCPs were observed in the UK (55.0%) and Italy (33.4%) and the lowest – in Spain (10.0%) and France (6.7%; Figure 1)
- Future lipid management (FLM) plans were commonly reported missing from discharge letters:
  - The majority of PCPs in the UK (75.0%), Spain (70%) and the Netherlands (50%) stated they would like to see these FLM plans in discharge summaries
  - In each of the participating countries at least 60% of SCPs indicated that FLM plans were missing from discharge summaries (Figure 2)

- FLM plans were consistently named by PCPs among the top 2 pieces of information that were missing from discharge summaries and should be included, in all participating countries (except for French PCPs). Planned lipid lowering therapy titrations was the most important missing information for discharge summaries and should be included for German and Italian PCPs, with Spanish and British PCPs identifying serum lipid goals as the key factor that was missing from discharge summaries and should be included. In the Netherlands and in France, the most important information that was missing from discharge summaries and should be included were the lipid lowering therapy sequencing/treatment options and frequency of follow-up or review visits, respectively. (Table 2)

### CONCLUSION

- Two key measures for controlling low density lipoprotein cholesterol were adherence to lipid lowering therapy and ensuring secondary care physicians and primary care physicians receive relevant guidance on lipid management plans from cardiologists. Effective management of both factors may facilitate better low density lipoprotein cholesterol goal achievement and improved cardiovascular outcomes in post-myocardial infarction patients in Europe

### ACKNOWLEDGMENTS AND DISCLOSURES

This study was funded by Amgen. Medical writing assistance was provided by Robert Gardner PhD, MPH (Bioscript Medical Ltd, Macclesfield, UK) and funded by Amgen (Europe) GmbH

NQ has received honorarium and travel expenses for lectures from Amgen. JHC reports honoraria for consultancy from Amgen. FS reports speaker / board honorarium from Amgen, Bayer, Novo Nordisk, Lilly, Servier, Mylan, AstraZeneca, and Sanofi. PP-F reports honoraria for consultancy and speaker activity from Amgen. JB has nothing to disclose. ES and GV are employees and stockholders of Amgen. JRG-J reports personal fees from Amgen, Bayer, Boehringer Ingelheim, MSD, Daiichi Sankyo-Lilly, Novartis, Novo Nordisk, Pfizer, Sanofi Aventis, and Servier.