Contemporary data on treatment practices for low-density lipoprotein cholesterol in 3867 patients who had suffered an acute coronary syndrome across the world

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DYSIS II ACS was a longitudinal, observational study in 3867 patients from 18 countries. They were being hospitalized after suffering an acute coronary syndrome. Evaluations were performed at the time of admission and again 120 ± 15 days following the date of admission (the follow-up time point). 2521 patients...
were on active lipid lowering treatment (LLT) at admission. Mean atorvastatin dose was 22 mg per day and 2.7% received ezetimibe in combination with a statin. At discharge from hospital, 3767 patients received LLT expressed as a mean atorvastatin dose of 36 mg per day with 4.8% receiving ezetimibe on top of a statin. After 120 days, intensity in lipid lowering treatment was reduced to 32 mg per day with 4.9% of the patients receiving ezetimibe and a statin. Of note, during this 4-month follow up period, only 32% of all patients received laboratory lipid testing. 37% attained the low density lipoprotein cholesterol (LDL-C) target value of < 70 mg/dl after 120 days. There are differences in the therapy administered as well as in the switch strategies when comparing the data from the respective countries studied.

Conclusions: Only one in three patients achieved the LDL-C target value following only marginal improvements in atorvastatin dose or combination therapy after an ACS event.

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Specifications Table

| Subject area          | Biology |
|-----------------------|---------|
| More specific subject area | Dyslipidemia and cardiovascular risk |
| Type of data          | Tables and Figures |
| How data was acquired | Worldwide survey |
| Data format           | Analyzed |
| Experimental factors  | Observational, longitudinal registry |
| Experimental features | Comparison of lipid lowering therapies administered in patients post acute coronary syndrome, as well as LDL-C target achievement. |
| Data source location  | Institut für Herzinfarktforschung, Ludwigshafen, Germany |
| Data accessibility    | Data are included in this article |

Value of the data

- These data have been collected under real life conditions across the world.
- Stratification per country can help to facilitate a scientific dialogue for the benefit of coronary patients in these countries, but also help to compare treatment standards between geographies of the world.
- The data presented can help to guide treatment decisions for novel lipid lowering agents.

1. Data

See Figs 1 and 2 and Tables 1–3.
Fig. 1. LDL-C target attainment for ACS cohort. (A) LDL-C target attainment by pre-ACS risk level (ESC/EAS guidelines); (B) Proportion of ACS patients with an LDL-C level of < 70 mg/dL at hospital admission and at 120-day follow-up (for patients with values available at both time points, N = 1071).
2. Experimental design, materials and methods

DYSIS II ACS was a multicenter, longitudinal, observational study that included 3867 patients from 18 countries in Europe, the Middle East, South-, Southeast- and East-Asia.

The study was approved by the relevant ethics committees and carried out in agreement with local laws.

Inclusion criteria were as follows: 1) provision of written informed consent, 2) aged ≥18, 3) hospitalized for an ACS in 2013–2014, 4) availability of a full fasting or non fasting lipid profile based on blood drawn within 24 hours of admission, and 5) not participating in a clinical trial. Data were assessed at presentation for an acute coronary syndrome (ACS), at hospital stay and discharge, as well as after a predefined period of 120 days.

The ESC/EAS dyslipidemia guidelines (2011) were used as a reference in order to determine target value attainment after 120 days [1]. Low density lipoprotein (LDL-C) treatment target thus was <70 mg/dl. Since the guidelines also highlight the use of statins in highest tolerated dose, followed by the use of lipid lowering combination therapy, we determined statin dose administered, calculated as atorvastatin equivalent doses [2].

Data were collected in an electronic case report form and processed in a central web-based database at the Institut für Herzinfarktforschung, Ludwigshafen, Germany. It was used for both collection and storage of the data.
Table 1

Indicates the change in lipid-lowering therapy at admission to a hospital for the treatment of an ACS, as well as the changes applied during hospital stay, at discharge and after a 120 day follow up period.

| Country       | At admission | During hospital stay | At discharge | 120 days post ACS |
|---------------|--------------|----------------------|--------------|------------------|
|               | N            | LLT (%)              | AED          | E/S              | N              | % LLT | AED  | E/S | Lipid lab during follow up (%) | LDL-C < 70 mg/dl at follow up (%) |
| N             | LLT (%)      | AED                  | E/S          |                  | % LLT          | AED  | E/S  |     |                             |                                |
| Egypt         | 199          | 147 (26.1)           | 29.72 0 (0.0) | 199 (100.0)      | 199 (100)      | 53.12 0 (0.0) | 151 | 148 (98.0) 45.74 0 (0.0) | 23.8 % | 5.6 % |
| France        | 468          | 277 (40.8)           | 21.72 0 (4.3) | 450 (96.2)       | 453 (96.8)     | 48.02 14 (3.0) | 326 | 312 (95.7) 40.81 15 (4.6) | 48.5 % | 50.6 % |
| Germany       | 461          | 270 (41.4)           | 18.42 14 (3.0) | 447 (97.0)       | 447 (97.0)     | 20.91 23 (5.0) | 390 | 357 (91.5) 21.83 21 (5.4) | 27.9 % | 19.3 % |
| Greece        | 200          | 159 (20.5)           | 20.31 12 (6.0) | 196 (98.0)       | 196 (98.0)     | 31.28 9 (4.5)  | 194 | 188 (96.9) 29.87 15 (7.7) | 44.3 % | 22.1 % |
| Hong Kong     | 140          | 67 (52.1)            | 13.86 1 (0.7) | 135 (96.4)       | 131 (93.6)     | 16.46 1 (0.7)  | 136 | 132 (97.1) 17.18 0 (0.0) | 56.6 % | 48.1 % |
| India         | 521          | 404 (22.5)           | 28.51 2 (0.4) | 519 (99.6)       | 510 (97.9)     | 45.54 1 (0.2)  | 513 | 482 (94.0) 37.01 0 (0.0) | 15.6 % | 57.5 % |
| Ireland       | 57           | 32 (43.9)            | 32.67 1 (1.8) | 55 (96.5)        | 57 (100)       | 62.46 1 (1.8)  | 56  | 56 (100.0) 60 1 (1.8)     | 57.1 % | 46.9 % |
| Italy         | 212          | 142 (33)             | 26.71 9 (4.2) | 207 (97.6)       | 206 (97.2)     | 56.04 9 (4.2)  | 171 | 168 (98.2) 50.55 11 (6.4) | 31.6 % | 37.0 % |
| Jordan        | 40           | 24 (40)              | 24.35 2 (5.2) | 39 (97.5)        | 40 (100)       | 35.13 7 (17.5) | 30  | 30 (100) 37.33 0 (0.0)    | 3.3 %  | 100.0 %|
| Lebanon       | 82           | 61 (25.6)            | 24.49 1 (1.2) | 82 (100)         | 82 (100)       | 45.18 2 (2.4)  | 78  | 76 (97.4) 38.42 1 (1.3)  | 28.2 % | 27.3 % |
| Philippines   | 48           | 26 (45.8)            | 48.27 0 (0.0) | 46 (95.8)        | 47 (97.9)      | 56.74 0 (0.0)  | 21  | 21 (100) 44.5 0 (0.0)     | 19.0 % | 50.0 % |
| Saudi Arabia  | 150          | 140 (6.7)            | 23.79 18 (12.0) | 150 (100)     | 150 (100)      | 38.13 64 (42.7)| 150 | 150 (100) 40.27 55 (36.7)| 15.3 % | 8.7 %  |
| Singapore     | 126          | 84 (33.3)            | 19.37 2 (1.6) | 121 (96)        | 122 (96.8)     | 35.29 4 (3.2)  | 108 | 106 (98.1) 33.89 3 (2.8)  | 61.1 % | 34.8 % |
| South Korea   | 308          | 162 (47.4)           | 16.91 9 (3.6) | 300 (97.4)       | 306 (99.4)     | 22.47 36 (11.7)| 301 | 296 (98.3) 20.72 27 (9.0) | 26.2 % | 62.0 % |
| Taiwan        | 130          | 58 (55.4)            | 14.42 4 (3.1) | 114 (87.7)       | 113 (86.9)     | 18.58 2 (1.5)  | 123 | 97 (78.9) 18.47 3 (2.4)  | 33.3 % | 36.6 % |
| Thailand      | 320          | 188 (41.3)           | 16.9 6 (1.9)  | 199 (99.5)       | 197 (98.5)     | 40.43 5 (2.5)  | 255 | 275 (96.5) 28.2 11 (3.9)  | 51.9 % | 25.7 % |
| UAE           | 200          | 129 (35.5)           | 23.51 1 (0.5) | 199 (99.5)       | 197 (98.5)     | 40.43 5 (2.5)  | 166 | 161 (97.0) 39.28 1 (0.6)  | 44.8 % | 44.8 % |
| Vietnam       | 205          | 151 (26.3)           | 17.4 1 (0.5)  | 204 (99.5)       | 200 (97.6)     | 19.93 0 (0.0)  | 191 | 186 (97.4) 18.49 1 (0.5)  | 13.6 % | 26.5 % |
| All           | 3867         | 2521 (34.8)          | 22.36 104 (2.7) | 3780 (97.8) | 3743 (930 (4.4) | 5767 (97.4) | 35.88 187 (4.8) | 3390 | 3241 (95.6) 32.41 165 (4.9) | 31.6 % | 37.0 % |

LLT, Lipid lowering treatment; AED, Atorvastatin equivalent dose; E/S, ezetimibe in combination with any statin; ACS, acute coronary syndrome; LDL-C, low density lipoprotein cholesterol; UAE, United Arab Emirates. % target value attainment after 120 days follow up given for those patients with recent lab values available.
SAS version 9.3 (Cary, NC, USA) was used for performing the calculations. Data are presented as absolute numbers and percentages (n/N), pertaining to either the baseline sample or the 3,390 patients who presented for the follow up visit.

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Transparency document. Supporting information
Transparency data associated with this article can be found in the online version at https://doi.org/10.1016/j.dib.2017.11.034.
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