Cost of severe hypoglycaemia in nine European countries

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1  Transparency

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1.2  Declaration of financial/other relationships

The authors declare that they have no competing interests. There is no specific organization that may in any way gain or lose financially from the publication of this manuscript. No ethical committee approval was required for the present study. JME peer reviewers on this manuscript have no relevant financial or other relationships to disclose.

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Abstract

Objective: Complications contribute largely to the economic gravity of diabetes mellitus (DM). How they arise and are treated differ substantially between countries. In this paper we assess the total annual, direct and indirect, cost of severe hypoglycaemia events (SHEs) in nine European countries: Bulgaria, Croatia, the Czech Republic, Greece, Hungary, Macedonia/the former Yugoslav Republic of Macedonia (MK), Poland, Slovenia, and Spain.

Methods: We collected data on epidemiology, treatment structure, SHE-driven resource consumption, and unit costs. We used two systematic reviews—on the SHE rates and the resources used for treatment—and data on the days-of-work lost due to SHE along with salaries and employment rates. We calculated the total SHE cost in each country and analysed how the differences are driven by individual parameters.

Results: The annual costs of SHEs varied in absolute terms from €379,951.25 in MK up to €58,429,684.40 in Spain, or—when expressed per one drug-treated DM patient—from €5.47 in Bulgaria up to €17.74 in Spain. Indirect cost constituted between 6.01% (MK) and 26.49% (Hungary) of the total cost. The differences between countries are driven mostly by the cost of treating a single event, and this is related to general differences in prices.

Limitations: The main limitation is the lack of good quality data in some parts, and the necessity to use mean-value imputations, experts’ opinions, etc. Additionally, we only considered DM treatment as the SHE driver, while other elements, e.g. style of living, may contribute substantially.

Conclusions: A common framework can be applied to estimate the economic burden of SHE in various countries, allowing to identify the drivers of differences in cost. Treating DM is complex, and so no resolute conclusions ought to be drawn as to whether SHE management is better in one country than another.

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