

Estimating the Economic Burden of Hypoglycemia in Patients with Type 1 and Type 2 Diabetes Mellitus in Austria

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Introduction

Hypoglycemia is a common side effect of diabetes treatment that leads to reduced well-being and substantial costs. To date the economic burden of hypoglycemia has not been estimated for Austria.

The aim of this study was to assess short-term health care costs and productivity losses associated with hypoglycemia among patients with type 1 and type 2 diabetes who were either treated with insulin or sulfonylureas in Austria.

Methods

Cost-of-illness study

An incidence-based methodology was used to calculate the direct and indirect costs of hypoglycemia per person and for Austria in 2015.

Data

A literature review was conducted to identify studies reporting on epidemiology, health care resource use and productivity losses associated with hypoglycemia. This was supplemented by market data regarding pharmaceutical use and expert opinion for care pathways.

Model

A bottom-up approach was used, with the costs of different diabetes types [a] (T1DM, T2DM), different hypoglycemic events [b] (NSDHE, NSNHE, SHE) and different treatment schemes [c] (SU, BOT, O, BBT) being calculated and extrapolated to a national level, based on the estimated incidence rates of hypoglycemia.

Direct costs

Treatment for hypoglycemia (glucagon), in-patient and out-patient services, primary and community services

Indirect costs

Productivity losses (absence from work)

Abbreviations

[a]
T1DM – Type 1 diabetes mellitus,
T2DM – Type 2 diabetes mellitus
[b]
NSDHE – non-severe daytime
hypoglycemic event,
NSNHE – non-severe nocturnal
hypoglycemic event,
SHE – severe hypoglycemic event

[c]
SU – Sulfonylurea,
BOT – Basal-Oral-Therapy,
O – Other (mixed-insulin,...),
BBT – Basis-Bolus-Therapy.

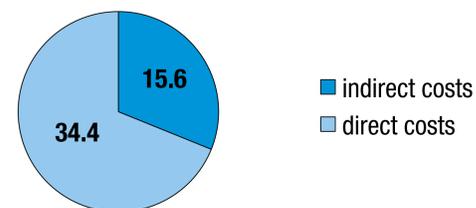
Acknowledgement

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Results

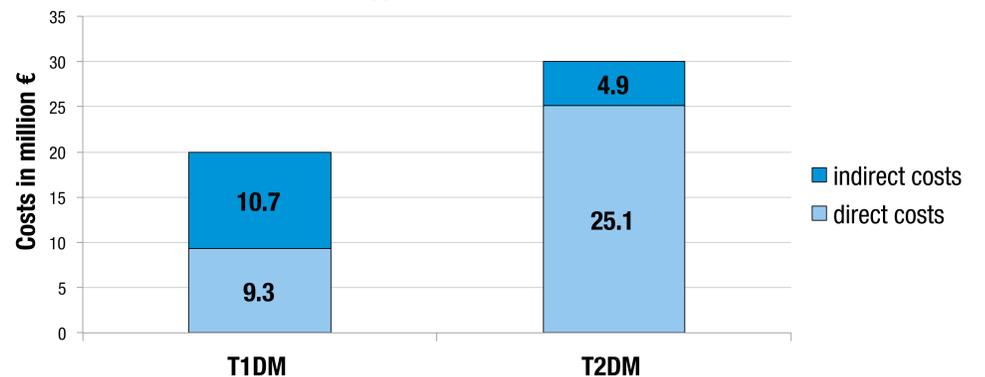
- Direct health care costs and productivity costs arising from hypoglycemia in Austria amounted to approximately **€ 50 million** in 2015.

The economic burden of hypoglycemia for Austria per year (2015) in million €

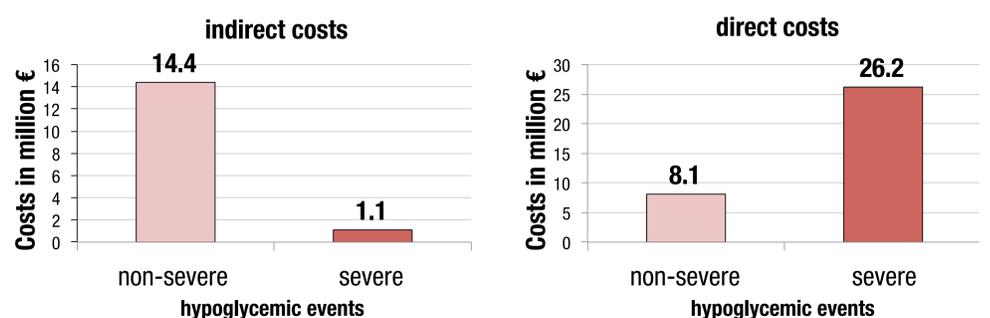


- The different characteristics of patients with type 1 diabetes and type 2 diabetes (e.g. age, treatment modalities) resulted in different cost distributions.

Direct and indirect costs of hypoglycemia according to type of diabetes mellitus



- Direct costs were predominantly caused by severe hypoglycemic events, whereas the majority of indirect costs resulted from non-severe hypoglycemic events.



Conclusion

- Hypoglycemic events constitute a significant economic burden, which may be reduced by improved diabetes management or recent technological advances which give timely warnings of an impending hypoglycemic event.
- Because the proportion of patients in working age is much smaller in T2DM compared to T1DM, T2DM contributes relatively little to the total amount of indirect costs.
- Direct costs are primarily the result of severe hypoglycemic events, whereas the majority of indirect costs are caused by non-severe hypoglycemic events.