



Does nocturnal hypoglycaemia really improve quality of life?

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Abbreviations

CGM	Continuous glucose monitoring
EQ-5D VAS	EuroQol-5D visual analogue scale
Hypo-RESOLVE	Hypoglycaemia – REdefining SOLUTIONs for better lIVES

To the Editor: We read with great interest the recent article by Henriksen et al. [1], the aim of which was to ‘assess the effect of spontaneous nocturnal hypoglycaemia on quality of life and mood during subsequent days’ in adults with type 1 diabetes. The authors concluded that ‘individuals with type 1 diabetes and impaired hypoglycaemia awareness reported higher quality of life on days preceded by nights with asymptomatic (but not symptomatic) hypoglycaemia’ [1]. We think there may be other possible interpretations of the data, which indicate an urgent need for further research.

Henriksen et al. [1] used the EuroQol-5D visual analogue scale (EQ-5D VAS), which is a measure of perceived health status, not of quality of life. The VAS is a single item, usually presented in combination with the five-item EQ-5D, that asks participants to rate ‘how good or bad your health is today’ on a

scale of 0 to 100. The single VAS item does not refer to quality of life in either the question wording or the anchors of the VAS. Many important studies, including the UK Prospective Diabetes Study (UKPDS) [2], have mistakenly assumed measures of health status to be synonymous with measures of quality of life. However, health is just one element of quality of life, and people with diabetes often consider other aspects, such as family, social life and work, to be more important to their quality of life than health status alone [3]. The limitations of misinterpreting the EQ-5D as a measure of quality of life have also been highlighted in the literature [3, 4].

Henriksen et al. [1] assert that the statistically significant difference in VAS scores observed the evening following an episode of nocturnal hypoglycaemia, as compared with nights without hypoglycaemia, is also a clinically important difference. However, the reference cited to support their approach [5] does not include data from people with diabetes. In addition, the previous publication [5] examined only the clinical significance of the EQ-5D descriptive system (i.e. the five items) without reporting a clinically important difference in VAS scores. The clinical importance of the difference in VAS scores is, therefore, uncertain.

Overall, we acknowledge Henriksen et al’s important contribution to understanding the impact of continuous glucose monitoring (CGM)-detected asymptomatic hypoglycaemia. Based on the above points, we believe the most accurate interpretation of the data is that CGM-detected asymptomatic nocturnal hypoglycaemia among people with impaired awareness of hypoglycaemia was associated with a statistically significant increase in self-rated ‘health status’ (as measured by the EQ-5D VAS), but that the clinical importance of this increase is uncertain. These findings make it clear that, as we focus on CGM-detected, asymptomatic hypoglycaemia in clinical care, we must understand its relevance and impact on self-management, health and quality of life. There are risks on either side if the impact is

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under- or over-estimated. The Hypoglycaemia – REdefining SOLutions for better liVEs (Hypo-RESOLVE) Consortium, funded by the EU IMI2, is already working on this important question [6]. As part of Hypo-RESOLVE, the Hypoglycaemia – MEasurement, ThResholds and ImpaCtS (Hypo-METRICS) study aims to use CGM in combination with a smartphone-based app that assesses daily functioning in the morning, afternoon and evening. This study will bring new insights into the temporal relationships between asymptomatic and symptomatic episodes of hypoglycaemia and daily functioning on a broad scale (e.g. sleep quality, mood, energy levels, cognitive functioning, social functioning and productivity) [6]. To fully understand how hypoglycaemia has an impact on quality of life, we need valid measurement, and this too is being investigated in the Hypo-RESOLVE project [7]. There is an urgent need for new instruments to capture the relevant impact of hypoglycaemia on quality of life.

We believe consideration of the above points and the research being conducted in the Hypo-RESOLVE project is essential for advancing our understanding of the impact of hypoglycaemia on quality of life in people living with diabetes.

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