A prevalence study of impaired awareness of hypoglycaemia in people who have been attended by the ambulance service

Background
Severe hypoglycaemia is a serious condition and accounts for 0.6-1.0% of all UK emergency ambulance calls per annum. Impaired Awareness of Hypoglycaemia (IAH) is a treatable condition that reduces patients’ awareness of an impending severe hypoglycaemic event.

Our previous qualitative research suggested that many of these calls were for people who had developed IAH. This reduction in illness perception may also influence their health behaviours making them less likely to follow-up their care.

The prevalence of IAH among people with type 1 Diabetes is approximately 25%. In type 2 its prevalence is approximately 10%. However the prevalence of IAH in people who use the ambulance service due to a hypoglycaemic emergency was unknown.

Methods
We undertook a national cross-sectional survey of the prevalence of impaired awareness of hypoglycaemia. An a priori target sample size of 415 responses was set to allow an estimation of proportions of impaired awareness of hypoglycaemia within a 5% margin of error (99% CI).

From January–June 2016, patients (>16 years) attended by the Scottish Ambulance Service due to a Diabetes related emergency with a blood glucose <4mmol/L were identified as potential participants.

Questionnaires with two standardised IAH measures [1,2] were posted to potential participants within a month of their severe hypoglycaemic event. Reminder questionnaires were posted to non-responders after 2 weeks. Consent to participate was assumed through questionnaire return. Questionnaires were posted to 1787 people. Ethical approval was received from NRES (15/EE/0383).

Questionnaires were returned from 590 people (590/1787, 33%) Median respondent age = 67 years. Median non-respondent age = 59 years. This was a statistically significant difference, t(1790)=4.612, p<.001. There were no statistically significant differences between responders and non-responders on gender or deprivation.

The prevalence of impaired awareness of hypoglycaemia among responders as measured using the Gold and Clarke measures was 53% and 57% respectively.


Objective
To investigate the prevalence of impaired awareness of hypoglycaemia in patients who require ambulance service attendance due to severe hypoglycaemia.

Results
Questionnaires were returned from 590 people (590/1787, 33%)

Median respondent age = 67 years. Median non-respondent age = 59 years. This was a statistically significant difference, t(1790)=4.612, p<.001. There were no statistically significant differences between responders and non-responders on gender or deprivation.

The prevalence of impaired awareness of hypoglycaemia among responders as measured using the Gold and Clarke measures was 53% and 57% respectively.

Conclusions
IAH is approximately twice as prevalent among people who have a severe hypoglycaemic emergency and call the ambulance service than in the general Diabetic population.

The condition may therefore be a significant contributor to the use of emergency ambulance services in people who experience a severe hypoglycaemic event. This is important as IAH is treatable. Identifying IAH could lead to improved patient illness perception, follow-up and therefore improvements in glycaemic awareness and control. This, in turn, could lead to better health outcomes and fewer ambulance calls.

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