Aims: This prospective observational study was aimed to determine the prevalence of impaired awareness of hypoglycaemia (IAH) and frequency of hypoglycaemia in pregnant type 1 diabetes patients.

Methods: IAH was assessed using three validated questionnaires (Clarke, Gold and Pederson). These questionnaires were amalgamated into a single questionnaire which also incorporated the Edinburgh Hypoglycaemic Score, questions on causes and worry for hypoglycaemia scored on a 7-point Likert scale. Questionnaires, self-monitored blood glucose diaries and Diasend® meter downloads were collected from the pregnant patients on a fortnightly basis.

Results: 8 pregnant (baseline mean ±SEM: age 28 ±1.24 years, duration of diabetes 12.5 ±3 years, HbA1c 65 ±7.88 mmol/mol) and 22 matched non-pregnant female (age 30 ±1.23 years, duration of diabetes 16.32 ±2 years, HbA1c 70.77 ±4.26 mmol/mol) type 1 diabetes patients were recruited. In keeping with previous observations, there was increased prevalence of IAH in pregnant patients compared to non-pregnant subjects. There was no significant difference in severe hypoglycaemia or proportion of blood glucose readings below 3.5mmol/L during pregnancy between IAH and aware patients. Pregnant subjects were significantly more worried about nocturnal hypoglycaemia than daytime hypoglycaemia (p=0.007). Patients with IAH felt more worried about hypoglycaemia compared to aware patients (p=0.04). Comparison of blood glucose diaries and meter downloads highlighted underreporting of hypoglycaemic events on diaries.

Conclusions: This report demonstrates increased prevalence of IAH during pregnancy. Further research is required to fully assess whether IAH assessed via questionnaires in clinic can predict higher incidence of hypoglycaemia or severe hypoglycaemia in patients. The findings of this study highlights potential for improved detection of hypoglycaemic episodes using technology.