

Observational study of the Psychological characteristics of patients with Type 1 Diabetes with extreme glucose fluxes

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A study using a prospective repeated measures design of 76 adults (18-65yrs) with T1DM was conducted to examine within and between person temporal associations of factors within the Hypoglycaemia Fear Survey (HFS-II) and Hyperglycaemia Avoidance Scale (HAS) and its association with the Low Blood Glucose Index (LBGI) and High Blood glucose index (HBGI). Measures of physical and mental well-being using the SF-12 and PCS scales were also examined.

Those with increasing hypoglycaemia burden (high LBGI) although found to have excess worry over hypoglycaemia ($p < 0.00001$), tended not to be proactive with avoidance of hypos with no correlation with either avoidance of hypos or maintaining higher glucose levels. (both $p > 0.1$). However, these patients were found to have significant behavior traits related to avoidance of hyperglycaemia ie. taking action of hypers, preference for hypos rather than hyper ($p < 0.00001$) and also had a significant worry of hyperglycaemia ($p < 0.00001$).

In conclusion, patients with T1DM with a high hypoglycaemic load, had worries over both hypoglycaemia and hyperglycaemia, with a possible acceptance of the low blood glucose range, but were very pro active in the hyperglycaemic range, potentially aggravating hypoglycaemia through drastic measures to correct hyperglycaemia.

We also found that those who had a worry for both hypo and hyperglycaemia had worsening scores on both SF-12 (Physical and Mental scores) and the PHQ-9 (screen for depression).

Therefore we feel it is pertinent in identifying and exploring patients health beliefs and worries with regard to the extremes of glucose flux, and tailor advice accordingly to address these fears.