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Differential effects of intravenous and subcutaneous sliding scale insulin regimes used to improve blood glucose levels in a tertiary care setting

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Background: The use of insulin sliding scales (SS) has been heavily criticised, with their use being described as ineffective or dangerous. However despite this, over half of all hospitals in the UK still recommend their use.

Aims: To determine if current insulin SS regimes are effectively used in our institution.

Methods: A retrospective case notes analysis of IV ($n = 48$), and SC ($n = 15$) SS in a single university teaching hospital between September 2007 and February 2008.

Results: Overall, pooled results showed no improvement of blood glucose levels for those on SC SS (8.78 vs 7.68 mmol/l $P = 0.31$). In the IV arm, there was a significant reduction in mean blood glucose levels over time (11.38 vs 7.6 mmol/l, $P = 0.005$).

Conclusions: Patients who are admitted with another condition unrelated to their diabetes often have longer lengths of stay than those admitted with a primary diabetes related diagnosis. This is thought in part to be due to the perception that the management of diabetes is an 'added burden' in addition to a possible lack of knowledge amongst nursing staff on non-metabolic speciality wards. We have shown that the use of IV SS leads to better glycaemic control but that SC SS insulin does not. However, our data also shows the use of these tools prevents the potential worsening of glycaemic control secondary to forced immobility and the stress of hospitalisation.