PEER REVIEW HISTORY

ARTICLE DETAILS

TITLE (PROVISIONAL)	Temporal patterns of hypoglycaemia and burden of sulphonylurea related hypoglycaemia in UK hospitals: a retrospective multi-centre audit of hospitalised patients with diabetes
AUTHORS	Rajendran, Rajesh; Kerry, Christopher; Rayman, Gerry

VERSION 1 - REVIEW

REVIEWER	Gregory Jones Department of Diabetes Gartnavel General Hospital Glasgow UK
REVIEW RETURNED	03-Apr-2014

GENERAL COMMENTS	This is a well performed an thorough survey (I am not sure this is strictly speaking an audit) of hypoglycaemia rates in a selection of hospitals which gives useful and relevant information regarding dangers of hypoglycaemia. It is especially helpful in highlighting the issue of sulphonylurea related hypoglycaemia. I note that it shows very similar results to our own recent paper (Jones GC ,et alTrends in recorded capillary blood glucose and hypoglycaemia in hospitalised patients with diabetes. Diabetes Res Clin Pract. Jan 25. pii: S0168-8227(14)00051-5. doi: 10.1016/j.diabres.2014.01.021. [Epub ahead of print] 2014) but adds significantly to our work in that this is a well defined and catergorised group of patients.

REVIEWER	Dr Dinesh Selvarajah Department of Human Metabolism Medical School University of Sheffield Sheffield UK
REVIEW RETURNED	14-Apr-2014

GENERAL COMMENTS	Rajendran et al present a well written manuscript detailing a retrospective multicentre audit of inpatients with diabetes from 11 acute UK NHS Trusts examining the temporal pattern of hypoglycaemic episodes. They also examine the relative contribution of sulphonylurea vs insulin therapy to hypoglycaemic episodes. Data was acquired from real-time point of care testing system over a four week period. The main findings of this study were

	1) high frequency of hypoglycaemic episodes between 2100-0859 and 2) greater frequency in the early morning period (0500-0759) in SU treated patients. The findings of this study will have important implications to the care of inpatients with diabetes (almost 1 in 5 patients). It highlights the need to review feeding times and the use of SU in hospitalised patients with diabetes. The main limitations of this study are explored in detail within the manuscript. The findings are discussed appropriately in light of these limitations. There are a few minor points of clarifications listed below: 1. Data acquisition. It is not clear how details of individual treatment regimes were obtained. Was it based on a retrospective review of individual case notes and what proportion of cases were not examined. 2. High risk SU group. Based on the data acquired, would it be possible to identify a subset of SU treated patients with hypoglycaemic episodes based on age, admission HbA1c or eGRF. This could provide a possible indication of those at greatest risk. 3. The main focus of this manuscript is the burden of SU related inpatient hypoglycaemia but there was also an equally high proportion of hypoglycaemic episodes in insulin treated patients. Again were there any particular features within this cohort based on insulin regimes, Hba1c etc that could provide an indication of those with the highest risk? 4. Details missing for in-press reference (line 26, page 9)?

VERSION 1 – AUTHOR RESPONSE

Reviewer 1:
Thank you for taking the time to review our manuscript and your comment referring to your recent publication which we read with great interest.
Reviewer 2:
Thank you for your valuable comments and we have revised our manuscript accordingly. Our replies to your comments are as follows:
1. Data acquisition: Individual treatment regimes were obtained from retrospective review of case records (now mentioned in the revised manuscript). All cases with hypoglycaemic readings were examined, except for a small (<1%) fraction of cases where there were no patient identifiers.
2. High risk SU group: Unfortunately, we did not collect eGFR for patients in our audit. The audit was not designed to collect this information. Secondly, to identify the actual risk of hypoglycaemia in SU treated inpatients, the number of patients who did not develop hypoglycaemia whilst on SU therapy is also required. However as mentioned in the limitations of our study, we were unable to obtain this information. We have now modified our manuscript to make this clearer.
3. Insulin subgroup: Unfortunately, we did not collect information of the type of insulin regimes resulting in hypoglycaemia, as this was not included in our original audit collection tool. Similar to SU therapy, we were unable to obtain information on number of patients who did not develop hypoglycaemia whilst on insulin therapy. This would have been useful in calculating the risk of hypoglycaemia with insulin therapy. We have now modified our manuscript to make this clearer.
4. The article was in press but has now been published online and the reference has been included in the revised manuscript.