From: UCSF-GME
Subject: From the CMO: Glycemic Control in the Adult ICUs
Date: Thursday, March 26, 2009 11:50:33 AM

Dear Colleagues,

We are writing to provide an update on recent data regarding glycemic control for adults in the ICU. The NICE-Sugar study (see NEJM references below) noted that aiming for glucose targets 80 to 110 mg/dl had worse outcomes at 90 days compared to glucose targets of 140 to 180 (mortality at 90 days of 27.5 % versus 24.9 % p=0.02). There was more hypoglycemia in the intensive group. Interestingly, there were significantly more patients receiving glucocorticoids in the "intensive control" group. Subgroup analysis has not yet been done but may prove interesting.

We need to point out the differences between the protocols instituted in the NICE-Sugar study and what is currently in practice in the adult ICUs at UCSF. The NICE-Sugar study enrolled all patients admitted to the ICU and we restrict interventions to patients with diabetes and hyperglycemia. Also the NICE-Sugar intensive group targets are much lower than what have been instituted in our ICUs. In our ICUs, patients on mealtime subcutaneous insulin achieve average glucose levels 155 with a hypoglycemia rate of 0.6%. Patients on IV insulin achieve an average glucose of about 144 with a hypoglycemia rate of 0.2-0.4%. Thus our control has been the same as the conventional target for the NICE sugar (median 142) which was associated with lower mortality.

Based on the data, we recommend the following:

1. We should continue to use insulin infusions in the adult ICUs. Switching to subcutaneous sliding scales would in our opinion be a regressive step, increasing the risk not only of severe hyperglycemia and DKA but also dangerous hypoglycemia.
2. We will continue to monitor and ensure that the glycemic targets remain in the safe range.
3. We will raise our targets to incorporate the information from these studies.

Please feel free to contact either of us with any questions or concerns.

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References:

Intensive versus Conventional Glucose Control in Critically Ill Patients
The NICE-SUGAR Study Investigators

Glucose Control in the ICU - How Tight Is Too Tight?
S.E. Inzucchi and M.D. Siegel