

Intensive care management of critically sick diabetic patients

Sir,

Diabetes mellitus (DM) is a major endocrine epidemic of modern times.^[1] India accounts for 16%–17% of the world's total diabetics, which corresponds to almost 43 million patients.^[2,3] These statistics are a challenging reflection of what our physicians are going to face in the coming years. Yet, most published data on DM focuses on outdoor patient morbidity, without examining the impact of this disease on the health of critically ill patients.

Admission of DM patients in intensive care units (ICU) can be due to various acute complications attributable to DM (diabetic ketoacidosis, hyperosmolar coma, and hypoglycemia), or some other underlying pathology and comorbidity. Invariably, the associated co-morbidities are the decisive factors responsible for such critical admissions and DM is a secondary contributor or sometimes an accidental finding.^[4-6] Till date, we have not come across any study in an Indian intensive care unit setup where major emphasis is given to the effect of DM on mortality and morbidity statistics of ICU. The paucity of such important data is mainly responsible for the failure in framing our own guidelines and protocols. This in turn leads to lack of uniform management policies across the country.

Over the last 4-year period, there have been 1283 admissions in our ICU out of which 179 (13.95%) were established cases of DM, while 64 (4.99%) were diagnosed as diabetes after admission. A total of 497 patients (38.73%) had hyperglycemia (BS > 140 mg/dL) at one time or the other during the ICU stay, including the diabetic patients. Forty-six patients having established DM succumbed to their underlying severe clinical disorder. Majority of these diabetic patients were admitted with varied clinical presentation, such as severe ischemic heart disease, respiratory failure and aspiration, acute renal shutdown, diabetic ketoacidosis, polytrauma with craniofacial and blunt abdominal injuries, poisoning, and status epilepticus, and so on. The glycemic control in these patients was achieved with insulin administration as per the established protocols of our ICU. The mortality rates in patients with DM and hyperglycemia were higher, which may be attributed to multiple pathophysiological derangements.

Whatever the clinical presentation, tight glycemic control

definitely decreases the mortality and morbidity in both diabetics and non-diabetics.^[7] The fluctuating uncontrolled glycemia causes much more oxidative injury than the sustained hyperglycemia. Hyperglycemia at cellular level enhances the quantity of clotting factors, causes endothelial dysfunction, platelet activation, and inhibition of protective fibrinolytic system, thus predisposing the patient to multi-organ failure.^[8-12] The various organ systems are highly vulnerable to hyperglycemic insults, and organ protection strategies should be the goal while simultaneously maintaining euglycemia. Intensive insulin therapy (IIT) in critically ill hyperglycemic patients with prolonged stay >5 days is associated with marked reduction in mortality varying from 40% to 50%, while reducing the morbidity ratio from acute renal failure, hepatic dysfunction, nosocomial infection, neuromuscular weakness, polyneuropathy of critical illness and severe anemia.^[13]

This letter is an attempt to stimulate our medical fraternity to come forward on a common platform in providing useful and significant information regarding the DM statistics of their respective ICUs. The purpose of this letter will be fulfilled if more and more data from various ICUs of our country, revealing the current status of DM and hyperglycemia, is documented. Such an effort will definitely help in designing a more comprehensive approach to treat critically sick DM patients.

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