Hyperglycemia

Fasting hyperglycemia. This is blood sugar that's higher than 130 mg/dL (milligrams per deciliter) after not eating or drinking for at least 8 hours.

Postprandial or after-meal hyperglycemia. This is blood sugar that's higher than 180 mg/dL 2 hours after you eat. People without diabetes rarely have blood sugar levels over 140 mg/dL after a meal, unless it's really large.

Complications

The importance of glycemic management in surgical patient populations stems from an association between hyperglycemia and increased rates of surgical site infections, sepsis, and mortality.

Guidelines

Various guidelines provide recommendations regarding target glucose concentrations, but all stress the importance of avoiding hypoglycemia as well. Within the surgical patient population, glycemic targets may vary further depending on the surgical service, such as cardiac surgery, neurosurgery, or reconstructive burn surgery. Glycemic management in critically ill surgical patients is achieved primarily through the use of intravenous insulin infusion protocols. These protocols can include fixed protocols, multiplication factor protocols, and computerized algorithms. In contrast, noncritically ill surgical patients are generally managed through the utilization of subcutaneous insulin with a combination of basal, bolus, and sliding scale insulin. Insulin protocols should be effective at maintaining glucose concentrations within the specified target range with minimal hypoglycemic events. Monitoring glucose concentrations while on either an intravenous or subcutaneous insulin protocol is essential. Point-of-care testing is the primary method for monitoring glucose concentrations move between units and to the outpatient setting, ensuring adequate follow-up is essential to maintaining control of hyperglycemia¹⁾.

The impact of hyperglycemia after traumatic brain injury (TBI), and even the administration of glucose-containing solutions to head-injured patients, remains controversial.

Clinical studies have indicated an association between acute hyperglycemia and poor outcomes in patients with traumatic brain injury (TBI), although optimal blood glucose levels needed to maximize outcomes for these patients' remain under investigation.

In transient middle cerebral artery occlusion, the hyperglycemia-exacerbated brain damage cannot be fully explained by the negative effects of plasma corticosteroids or neutrophil infiltration. The contribution of other intrinsic effects of high glucose, such as brain protein O-glycosylation, deserves further investigation ²⁾.

Persistent hyperglycemia (>200 mg/dl for >2 consecutive days) increases the likelihood of poor

outcome after aneurysmal subarachnoid hemorrhage³⁾.

Diabetes

see Diabetes.

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2)

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