Diabetic Ketoacidosis (DKA) Signs and Symptoms

Diabetic ketoacidosis (DKA) is a medical emergency and complication of diabetes. Patients have increased insulin requirements, which leads to a shortage. As a response, the body begins burning excess fat (and fatty acids), causing ketone body buildup. Symptoms of DKA include deep, labored Kussmaul respirations, dehydration, abdominal pain and nausea and vomiting. Due to electrolyte and fluid changes, patients display mental status changes and psychosis while exhibiting fruity breath odor.



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Kussmaul respirations
Kazoo Respirations
In severe DKA, patient breathing becomes rapid, labored and deep. This breathing pattern is termed Kussmaul respirations.

Dehydration
Empty-canteen
Dehydration occurs rapidly and is very serious with DKA. As the blood osmolarity increases due to high blood sugar (from lack of insulin), water is drawn into the GU system. Thus, patients become severely dehydrated but are producing excess urine.

Abdominal Pain
Abdominal Pain-bolt
Patients with excess ketone bodies and hyperglycemic crisis (as in DKA) experience abdominal pain. This is more pronounced in children, and may mimic the symptoms of an acute abdomen.

Nausea/vomiting
Vomiting
Accumulation of ketones and a hyperosmolar state manifests in nausea and vomiting in patients. The mechanism with patients experiencing these symptoms has to do with levels of salts such as sodium and potassium decreasing in the body, which triggers nausea and vomiting.

Psychosis
Psycho in straight-jacket
Patients with severe DKA suffer from mental status changes and delirium, which often manifest as psychosis. The etiology for these symptoms is the electrolyte and fluid balance changes incurred on the patient.

Fruity breath Odor
Fruity Breath
Patients with DKA often have fruity breath odor. This is because one type of ketone which accumulates, acetone, has a fruity smell.

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