



Acute Metabolic Complications of Diabetes

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Target Doctor, Early Career Physicians, Senior Resident, Resident (1-2 years after graduation), Medical Student

Diabetes mellitus is a chronic endocrine disorder which occurs of pancreatic insufficiency to make insulin or to impaired action or both causing hyperglycemia. Acute rise in plasma glucose in patients with Diabetes mellitus may lead to acute metabolic complications diabetic ketoacidosis, hyperglycemic hyperosmolar-nonketotic coma, lactic-acidosis and hypoglycemia. Underlying pathology includes raised blood sugar, metabolic acidosis, electrolyte abnormalities, hyper ketosis and water-deficit for all except hypoglycemia. Mostly it is because of relative insulin insufficiency together with excess of counter regulatory hormones precipitated mostly by prolonged fasting, dehydration, physical stress and infections. Poor carbohydrates utilization is further worsened by ketone synthesis causing acidosis and dehydration. Poor treatment compliance, infection, infarction, ischemia, alcohol intoxication, drug abuse are five important stressors. With the advent of SGLT-2 Inhibitors now we can see it in patients with less than 200 mg/dl plasma glucose level as Euglycemic ketoacidosis. Hyperglycemic-hyperosmolar State differs from that of diabetic ketoacidosis as it occurs with more severe dehydration due to osmotic diuresis without significant ketosis. Lactic acidosis is a medical emergency resulting from oxygen deprivation in the body's tissues, impaired liver function, respiratory failure, or cardiovascular disease. Modifiable predictors of severe hypoglycemia include intensive insulin treatment with the intention of tight glycemic control.