IOWA POISON CONTROL CENTER

Poison HOTLINE

1-800-222-1222

December 2022

Did you know ……

The IPCC often takes calls about medication errors, including insulin errors. The most common errors when taking insulin include taking the wrong dose or administering the wrong type of insulin (i.e, short, rapid, intermediate or long acting). The type of insulin used affects how quickly the insulin begins to work and how long it remains active. Insulin errors are reported to the IPCC more frequently during the evening, between 8 and 11 p.m.

When possible, the IPCC can assist patients and families with frequent follow-up calls to help monitor the effect and assist with managing blood sugars.

If someone has made a mistake with their medicine, call Poison Help at **1-800-222-1222** to find out what treatment may be needed.

Metformin

Metformin is an oral hypoglycemic agent often prescribed for those with type II diabetes mellitus. While exposure is common, severe toxicity is rare. Metformin works to reduce the production and absorption of glucose, while improving the uptake of peripheral glucose. In acute overdoses, hypoglycemia is not likely because the release of insulin is not stimulated. Monitoring for hypoglycemia would be necessary if there were a co-ingestion of another anti-diabetic agent that could cause low blood sugars.

The observation criteria can be up to 8 to 12 hours depending on the formulation and the patient's clinical presentation. Medical discharge is indicated if there is no evidence of metabolic acidosis or hypoglycemia. Patients with severe metabolic acidosis require further care in the intensive care unit.

Symptoms of mild to moderate toxicity may include nausea, vomiting, abdominal pain, malaise, and myalgias. The same presentation of gastrointestinal symptoms is common even with therapeutic use. With severe toxicity, patients may develop severe lactic acidosis, altered mental status, hypothermia, hypotension, and renal failure. Those with impaired liver or kidney function may be at even more risk for severe lactic acidosis, which in some cases had led to fatalities.

Management of metformin toxicity in mild to moderate amounts involves providing excellent symptomatic and supportive care. With severe toxicity, severe anion gap metabolic acidosis or severe lactic acidosis may develop producing a pH <7.1. Intravenous sodium bicarbonate should be administered and titrated to correct acidosis abnormalities. Hemodialysis may be indicated to correct the acid-base status, highlighting that hemodialysis does not remove significant amounts of metformin because of its large volume of distribution. The Extracorporeal Treatments in Poisoning (EXTRIP) Guidelines can be helpful in determining when to consider hemodialysis. Some indications considered include lactate concentration > 20 mmol/L, pH $\leq$ 7.0, and failure of standard therapy attempts.

Call the IPCC at **1-800-222-1222**, available 24/7, for assistance with treatment and management of any poisoned patient.

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POISON HELP 1-800-222-1222 POISONHELP.ORG

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