

# Fatal Lactic Acidosis Due To Metformine

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## Citation

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## Abstract

A 55 year-old male patient was admitted to emergency department. He ingested 50-60 tablets of 850 mg metformin for suicidal attempt. Blood glucose 352 mg/dL, ALT 52 IU/L, AST 39 IU/L, LDH 441 IU/L, lactate over 181 mg/dL, pH 7.29, pO<sub>2</sub> 44 mmHg, pCO<sub>2</sub> 39 mmHg, HCO<sub>3</sub> 18 mEq/L, oxygen saturation was 74%. Bicarbonate was given by intravenous push at a dose of 1 mEq/kg body weight and the patient was transferred to the intensive care unit. Haemofiltration was performed for lactic acidosis. As a result, haemofiltration should be initiated immediately in patients with acidosis associated with metformin. Thus mortality rates can be lessened.

Dear Editor,

A 55 year-old male patient with complaints of nausea, abdominal pain, somnolence, and drug ingestion was admitted to Trakya University School of Medicine hospital through the emergency department. He ingested 50-60 tablets of 850 mg metformin for suicidal attempt and after 3.5 hours of ingestion he first sought for medical assistance in the state hospital; then the patient was transferred to our hospital. He had type 2 diabetes mellitus for 3 years and had been using metformin, rosiglitazone, and glipizide. On physical examination his general condition was fair, blood pressure 90/50 mmHg, pulse rate 110 bpm, and lethargic. An intravenous line was inserted for isotonic infusion. Blood was drawn for laboratory assessments. Since four hours had passed after ingestion, gastric lavage was not done. One gram of charcoal per kilogram body weight was administered via nasogastric tube. Laboratory tests yielded a leukocyte count of 11,000/mm<sup>3</sup>, haemoglobin 12.8 g/dL, haematocrit 37.3%, platelet count of 263,000/mm<sup>3</sup>, urea 23 mg/dL, creatinine 1.8 mg/dL, blood glucose 352 mg/dL, ALT 52 IU/L, AST 39 IU/L, LDH 441 IU/L, lactate over 181 mg/dL, pH 7.29, pO<sub>2</sub> 44 mmHg, pCO<sub>2</sub> 39 mmHg, HCO<sub>3</sub> 18 mEq/L, oxygen saturation was 74%. Sinus rhythm was detected on ECG. Bicarbonate was given by intravenous push at a dose of 1 mEq/kg body weight and the patient was transferred to the intensive care unit. Bicarbonate infusion was continued in the unit. During follow-up, hypotension and respiratory arrest ensued; therefore endotracheal tube was inserted and a mechanical ventilation device was attached. Repeat arterial blood gas testing revealed a pH of

6.8, pO<sub>2</sub> of 85 mmHg, pCO<sub>2</sub> of 49 mmHg, HCO<sub>3</sub> of 7 mEq/L, and oxygen saturation of 86%. Haemofiltration was performed for lactic acidosis. During follow-up cardiac arrest occurred and cardiopulmonary resuscitation (CPR) was performed. Since he did not respond to 45 minutes of CPR and eventually he was accepted exitus.

Metformin is a biguanide oral antidiabetic medication. Biguanides lower blood glucose levels by reducing intestinal glucose absorption and gluconeogenesis, and by increasing peripheral glucose uptake. Besides they can lead to lactic acidosis, hypothermia, and hypotension (1, 2). Correction of metabolic acidosis due to biguanide intoxication is of paramount importance. Sodium bicarbonate is the most frequently used agent in the treatment. Haemofiltration and bicarbonate replacement are the most appropriate therapy in the treatment of acidosis associated with metformin (3-6).

We performed haemodialysis using bicarbonate fluids although we lost the patient. As a result, haemofiltration should be initiated immediately in patients with acidosis associated with metformin. Thus mortality rates can be lessened.

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