

中文題目：一位酒精性肝硬化的患者發生了致命的乳酸中毒:病例報告

英文題目：Life-threatening Lactic Acidosis in A Patient with Alcoholic Liver Cirrhosis: A Case Report

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## **Introduction**

Lactic acidosis is frequently encountered in the ICU and it occurs when there is an imbalance between production and clearance of lactate. Currently, lactic acidosis is generally defined as a lactate level  $> 5$  mmol/L and may be classified by association with imbalance of oxygen delivery and oxygen consumption (type A lactic acidosis) or other clinical conditions unrelated to oxygen debt (type B lactic acidosis).

## **Case Report**

A 76-year-old man presented with chest pain and epigastralgia for 2 days . His medical history included 5 years of non-insulin dependent diabetes mellitus (NIDDM) and 1 year of alcoholic liver cirrhosis. Three years ago, metformin 500mg tid was added for sugar control. On arrival at the emergency department (ED), his temperature was  $36^{\circ}\text{C}$ , pulse was 134 beats per minute, blood pressure 119/57 mmHg, respiratory rate 22 breaths per minute but his arterial blood gas results were pH 6.802,  $\text{pO}_2$  194 mmHg,  $\text{pCO}_2$  12.7 mmHg,  $\text{SaO}_2$  98%, and bicarbonate 1.9 mmol/L. The lactate concentration was more than 24 mmol/L. Other laboratory values were sodium 137 mEq/L, potassium 4.6 mEq/L, urea nitrogen 28.8 mg/dL, creatinine, 1.52 mg/dL, and ketone body was negative. Toxicologic tests for methanol and ethyl alcohol were negative. Ten minutes after admission to the intensive care unit (ICU), he developed bradycardia, heart rate 37 beats per minute with low blood pressure 63/29 mmHg so cardiopulmonary resuscitation was performed.

## **Discussion**

The development of severe lactic acidosis and unstable hemodynamic status is a big challenge for clinicians. The primary goal of therapy in lactic acidosis is to correct the underlying disorders. In fact, we initially had great difficulty to explore the underlying disorder responsible for this life-threatening lactic acidosis until metformin was noted for diabetic treatment of the patient. Metformin is an orally administered antihyperglycemic agent used to patients with NIDDM. Metformin is the principal biguanide in clinical use. Lactic acidosis is a rare but potentially fatal metabolic consequence of metformin therapy. In most patients it occurs because one or more contraindications were overlooked. Patient-associated risk factors that may directly or indirectly result in increased blood lactate concentrations in patients taking metformin include: renal insufficiency, advanced age, cardiac or respiratory insufficiency, severe infection, surgery, liver dysfunction, alcohol abuse, a history of lactic acidosis, intravenous radiographic contrast agents, and pregnancy.

In conclusion, metformin is a widely prescribed oral antihyperglycemic agent and health care professionals should be aware of the contraindications for the drug's use to avoid doing harm for susceptible patients when prescribing metformin.