

Acidosis Metformin-associated: case report

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Argomento: Caso clinico

Metformin is a common treatment for diabetes mellitus type 2.

Probably under-diagnosed, several cases of severe lactic acidosis admitted in emergency department can be associated with its use. (1)

Even if it's frequent and the mortality rate approaches 50%, the assessment of plasma concentration that could confirm the correct diagnosis is not available in all laboratories.

Renal replacement therapies correct the metabolic acidosis, removing rapidly metformin and lactate. (2)

A 61-year-old patient, affected from diabetes, hypertension, coronary heart and vascular disease presented to our emergency department complaining of malaise and dyspnea after several days of low-grade fever, abdominal pain and diarrhea, treated at home with antibiotics, antispasmodic and analgesics.

The first arterial blood gas analysis showed severe metabolic hyperlactacidaemic acidosis (pH 6.66, pCO₂ 10.3, P/F >600, lactates >20mmol/l, BE -37, HCO₃⁻ 1.1), so he was immediately intubated and ventilated, blood sample sent to Pavia's poison control center to dose metformin plasma concentration, admitted in our ICU for dialysis and treatment.

During recovery there was a progressive restoration of acid-base balance within 2 days (reached with hemodynamic optimization with fluids and norepinephrine, dialysis and bicarbonate infusion) but hypoxaemia and pancreatitis appeared on first day.

His fecal matter was positive for *S.typhi*: we started specific antibiotic therapy.

Metformin plasma concentration was 66...

At present, patient's general conditions are improving, persisting hypoxaemia treating with HF and acute renal failure corrected by intermittent dialysis.

We demonstrated that lactic acidosis by metformin was related to dehydration by bacterial persistent diarrhea and they caused MOF and worsened prognosis.

In severe metformin-associated lactic acidosis, infection and sepsis must be suspected and investigated.