

METFORMIN AND LACTIC ACIDOSIS: A POTENTIALLY LETHAL RELATIONSHIP DURING INTERCURRENT ILLNESS

Marjeta Kermaj¹, Enalda Demaj¹, Gerta Sinani², Violeta Hoxha¹, Gerond Husi¹, Armela Çuko³, Agron Ylli¹

Service of Endocrinology, University Hospital Center "Mother Theresa", Tirana, Albania(1)
Hospital Center of Librazhd, Albania(2)

Service of Respiratory Diseases, University Center Hospital "Shefqet Ndroqi"(3)

INTRODUCTION

Metformin-associated lactic acidosis(MALA) is defined as a high anion gap metabolic acidosis with high circulating lactate levels and without hypoperfusion. It is associated with a mortality rate up to 50%. The reported frequency is 0.01 to 0.05 per 1000 patient-years, mostly in patients with predisposing factors (which affect its clearance or energy metabolism) such as altered renal function, congestive heart, hepatic and respiratory failure, concomitant medications (angiotensin II receptors antagonist), old age. We present a report of a patient with type 2 diabetes who was receiving long term treatment with metformin and developed severe metformin associated lactic acidosis after dehydration, which resulted in renal impairment and consequent accumulation of metformin.

We want to remind of a potentially lethal adverse reaction of this drug.

CASE REPORT

Our patient was a 64-year-old Albanian woman with a 3 year history of type 2 Diabetes Mellitus (treated with metformin 850mg/d) and hypertension (treated with losartan 50mg/d). She presented to our emergency with acute renal, hepatic, circulatory failure and severe metabolic acidosis, after a week history of abdominal pain, vomiting (associated with poor oral intake) and dispnea. Her medication also compromised a 3 day history of clarithromycin for acute sinusitis. She took adequate supportive care, management of concurrent disease, correction of acidemia, acceleration of lactate metabolism, and interruption of the offending drug. Twenty four hours later, full clinical recovery was observed, with return to a normal serum lactate level.

CONCLUSIONS

Our initial impression was that the multiorgan failure was due to a combination of factors, including poor oral intake and nephrotoxic agents. Dehydration in patients taking metformin can lead to MALA. Given that mortality metformin should always be discontinued in such a clinical scenario. This case illustrated the importance of stopping metformin treatment (even small dose) during intercurrent illness, especially dehydration.

Keywords: Metformin, lactic acidosis, dehydration.