

SEVERE LACTIC ACIDOSIS DUE TO METFORMIN

C. Rosado, R. Manzanedo, C. Felipe, J. Martín-Centellas, D. Menéndez, D. Barreda, J. Martín-García

Service of Nephrology of the Hospital Nuestra Señora de Sonsoles, Ávila (Spain)

OBJECTIVES

Introduction:

The latest diabetes guidelines consider that the use of metformin in patients suffering from chronic kidney disease having CrCl over 30 ml/min is safe. However, metformin is formally contraindicated when CrCl is below 30 ml/min, because of the risk of developing lactic acidosis.

Aims:

The study of the characteristics and clinical course of the patients with severe lactic acidosis due to metformin (LADM) being admitted in our Nephrology service. The definition of a patients' profile in which we should modify the dose of metformin or replace it with other oral antidiabetic drugs or insulin.

METHODS

It is a descriptive, observational and retrospective study of the patients suffering from LADM who needed to be hospitalized in the Nephrology service because of the severity of their illness.

The study was carried out in ten years (2004-2014).

The statistical software used was SPSS v20.0 for MacOsX. Quantitative variables are expressed as median value and interquartile range and the qualitative variables are expressed as percentages.

RESULTS

During the study period, 8 patients suffering from LADM were admitted in our Nephrology Service (11,59% of hospital admissions with urgent hemodialysis)

7 were women (87,5%), with a mean age of 67,5 years.

There were not any patient from 2004 to October 2009.

From 2009, cases have been rising almost every year (1-2-0-2-3) until December 2014.

All patients suffered from acute kidney injury (median of Cr at admittance 9,20 mg/dL) due to dehydration secondary to acute gastroenteritis and all of them had been treated with diuretic drugs or RAS inhibitors, not modified during the gastroenteritis period.

Previous e-GFR (CKD-EPI) was <60 ml/min in the 37,5% of the patients.

87,5% suffered from arterial hypotension, treated with vasoactive drugs in the 50% of them.

Urgent hemodialysis was necessary in the 87,5%.

Mortality rate was 25%

CONCLUSIONS

- Although the incidence of LADM is small, it seems to be growing up, and it is a severe condition, with high rates of need of dialysis and mortality.
-
- The susceptibility for having acute kidney injury is a key risk factor for LADM.
-
- There is a group of patients more susceptible for this entity: elderly women who are treated with diuretics and/or RAS inhibitors, suffering from dehydration due to acute gastroenteritis and arterial hypotension, which generate acute kidney injury.
-
- They should be monitored if there are any circumstance that could generate acute kidney injury, in order to reduce the dosage or replace metformin with another drug.
-
- We need randomized, multicentric, clinical and molecular pharmacogenomic studies in order to determine the true impact of this condition and to modifying (if needed) the guidelines, since all available data come from small case series.

