Lactic Acidosis Coma in Continuous Ambulatory Peritoneal Dialysis

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Dear Sir,

We have recently observed a case of lactic acidosis coma in a patient on continuous ambulatory peritoneal dialysis (CAPD).

The patient, a 69-year-old female, weighing 78.5 kg and 162 cm tall, had been on CAPD treatment for 2 months because of analgesic nephropathy, proved by anamnestic investigation and by kidney biopsy.

She developed severe lactic acidosis with abrupt onset and without warning, during an episode of peritonitis and circulatory failure. The maintenance therapy consisted of digoxine, nifedipine and aluminum hydroxide.

Laboratory data were: arterial blood pH 7.19, PaO₂ 64.1 mm Hg, PaCO₂ 32.6 mm Hg, plasma bicarbonate 11.5 mEq/l, plasma lactate concentration 120 mg/100 ml (normal values 5–22 mg/100 ml), sodium 136 mEq/l, potassium 6.49 mEq/l, chloride 95 mEq/l, BUN 77 mg/100 ml, creatinine 8.35 mg/100 ml, glucose 91 mg/100 ml, hema-tocrit 24.7%, hemoglobin 7.6 g/100 ml. We treated lactic acidosis with sodium bicarbonate infusion (600 mEq in 48 h) and acetate hemodialysis (4 h twice a day for the 1st day and once a day for the following 2 days).

The patient recovered after 2 days of treatment. Laboratory data were: arterial blood pH 7.41, PaO₂ 59.7 mm Hg, PaCO₂ 37.9 mm Hg, plasma bicarbonate 24.7 mEq/l, plasma lactate 17 mg/100 ml; and after 4 days of treatment: arterial blood pH 7.43, PaO₂ 68.8 mm Hg, PaCO₂ 46 mm Hg, plasma bicarbonate 30 mEq/l, plasma lactate 13 mg/100 ml.

An increased plasma lactate concentration has been reported to occur during intermittent peritoneal dialysis (IPD) [1], but lactic acidosis has never been reported during CAPD.

It is possible that more concomitant mechanisms have determined the severe lactic acidosis in our patient: (a)

hepatic failure because of hepatitis following long-term exposure to paracetamol [2,3]; that may justify the lack of a metabolic way of lactate to piruvate; (b) circulatory failure, which may induce a shift from aerobic metabolism to anaerobic glycolysis and thereby produce lactic acidosis [4]; (c) fasting in the presence of obesity, which may induce accumulation of lactic acid in significant amounts [4].

References

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