

METFORMIN ASSOCIATED LACTIC ACIDOSIS: THE MARSHFIELD CLINIC EXPERIENCE Falgun Modhia,
Douglas P. Duffy, Michael D. Hammeke and Narayana S. Murali,
Marshfield Clinic, Marshfield, Wisconsin, USA.

Metformin is the second most commonly prescribed oral antidiabetic agent. The incidence of Metformin Associated Lactic Acidosis (MALA) is reported to be 1 to 5 per 100,000 patient years under study conditions. However, real life prescribing patterns are far less rigid than study criteria. We attempt to review the incidence of MALA, its management and outcomes at our center.

Marshfield Clinic is one of the largest non-profit medical clinics in the USA serving 40 locations across Wisconsin with over 1.7 million patient encounters each year. From August 1, 2002 through September 30, 2007 we identified 2,303 patients with the diagnosis of Acidosis (CPT 276.2 - Acidosis, E858.0 - Acc Poison-Hormones). Of all patients who took or were prescribed Metformin in that period, 229 patients were on Metformin prior to diagnosis of acidosis. All charts were individually reviewed after approval from the Institutional Review Board.

Of these 229 on Metformin, 2 patients had confirmed MALA. Both developed severe lactic acidosis (14.5 ± 0.2 mmol/l), Acute Kidney Injury with Failure ($Cr = 4.95 \pm 2.6$ mg/dL) and elevated Metformin levels (91.5 ± 48.5 , Normal < 5). Both underwent bicarbonate continuous renal replacement therapy (CRRT). We review demographics, incidence, presenting & co-morbid factors, and duration of stay, management as well as outcomes.

MALA may be more common than noted in older clinical studies. Our outcomes suggest more favorable results than previously recognized. Prompt CRRT portends favorable outcomes even in the face of severe lactic acidosis. The theoretical concern for worse outcomes with bicarbonate dialysis was not observed. Awareness of its subtle and sometimes nonspecific presentation may guide physicians to promptly recognize MALA and provide emergent management.