Correspondence

Apparently Unexplainable Hypoglycemia in a Diabetic Patient - Clue for Renal Failure?

Sir,

Hypoglycemia is the most frequent complication of Diabetes Mellitus. About 10-25% of diabetics experience hypoglycemia at least once a year. Hypoglycemia accounts for 3-4% of deaths in a diabetic on insulin therapy.1 We report a patient who presented with hypoglycemia due to renal dysfunction caused by Nimesulide and improvement in renal function and glycemic status after stopping the drug.

A 52-year-old male known diabetic since 8 years who was on premixed human insulin (30/70) 16 units before breakfast and 10 units before dinner was brought to casualty in an unconscious state. There was no h/o fever, head injury, fasting or overexertion. He was afebrile, had no pallor or jaundice, and had mild pitting pedal edema. Pulse was 100/min, Blood Pressure-130/84 mmHg, Respiratory Rate – 16/min, Cardiovascular, respiratory system, abdomen were clinically normal, he had no focal neurological deficit, his blood sugar was 46 mg%, he regained consciousness soon after giving I.V. Dextrose infusion. His other reports were, urine examination – Trace proteinuria Sugar Nil; 3-4 pc/Hpf; Blood TC-6800 cells/c.mm; D.C-N64L32E4Mo; Hb-12.4 gm%; ESR – 16 mm/Hr; Blood Urea – 84 mg%; Sr.Creatinine – 3.6 mg%; Sr.Electrolytes Na-148; K-4.5; Cl-106 mmol/ltr; Sr.Total Bilirubin 0.8 mg%; Direct -0.3 mg%; Sr. Calcium 8.8 mg%, Phosphorus-4.2 mg%; Alkaline Phosphatase-160 i.u/L. His previous records revealed, moderate control of Diabetes, HbA1c -7.8 and normal renal functions. He had taken T.Nimesulide 100 mg/d, since 8 days for backache, which was across the counter purchase. He had lumbar spondylosis on evaluation and was prescribed belt for the same and tab paracetamol for immediate relief of pain. Insulin dosage was adjusted. On follow-up, his Sr. Creatinine returned to 0.8 mg% after 10 days.

About 30-40% of Insulin is metabolized in kidneys while about 60-70% is metabolized in liver.2 Hence Hypoglycemia could occur either in liver or renal dysfunction. Also kidney takes part in gluconeogenesis constituting to about 45% of endogenous glucose during prolonged fast.3 Hypoglycemia is very common in patients with renal failure, affecting 67% of diabetics with renal failure and the most common precipitating factor is often drugs.4 Non steroidal anti-inflammatory drugs (NSAIDs) induced Acute Renal Failure (ARF) is quite common constituting about 6-8% of total ARF.5 NSAIDs cause renal failure in susceptible individuals by inhibition of synthesis of renal vasodilator prostaglandins.6

Our patient was probably in the pre-clinical phase of diabetic nephropathy whose glomerular filtration rate (GFR) was being maintained by afferent arteriolar dilatation mediated by vasodilator prostaglandins. Hence, the use of Nimesulide, a cyclooxygenase-2 (Cox2) inhibitor, whose action in kidney is no different from NSAID, precipitated renal failure by reduced blood flow to the glomeruli. This report highlights the need for renal function test, when a diabetic presents with unexplainable hypoglycemia and to search for a precipitating cause of acute injury to the kidney, the mitigation of which could salvage kidney function.

PN Jikki*
*Associate Professor of Nephrology, Gandhi Medical College, Secunderabad.
Received : 7.6.2008; Accepted : 26.6.2008

REFERENCES