



A RARE CASE OF LEVOFLOXACIN INDUCED HYPOGLYCEMIA


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ABSTRACT

Levofloxacin a broad spectrum fluoroquinolone, is a commonly prescribed antimicrobial for many bacterial infections. This case report highlights rare case of hypoglycemia in a 63 year old female patient with past history of hypertension and chronic kidney disease who presented to our emergency department (ED) with history of fever and dry cough since 3 days. Diagnosed to be having community acquired pneumonia and started on injection Levofloxacin 500mg once daily. On third day of admission, patient suddenly developed headache and became anxious, confused with tachycardia and tachypnoea. Patient was found to be having hypoglycemia (GRBS- 58mg/dl). Suspected to be having Levofloxacin induced hypoglycemia, hence Levofloxacin was stopped and hypoglycemia was managed with multiple boluses of 100ml 25% dextrose. This case report highlights the rare cause of hypoglycemia caused by Levofloxacin. High suspicion about this rare side effect and stopping of the Levofloxacin along with symptomatic treatment can reduce morbidity and mortality.

Key words: Levofloxacin, Hypoglycemia, Pneumonia, Fluoroquinolones.

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INTRODUCTION

Fluoroquinolones are commonly prescribed antimicrobial agents for both community and hospital acquired infections. Some of its side effects include nausea, vomiting, headache, diarrhoea and insomnia. Few drugs among these Fluoroquinolones are banned due to adverse drug effects [1]. Hypoglycemia is a rare but devastating complication associated with Levofloxacin. Hypoglycemia related to Fluoroquinolones is a rare entity. Early diagnosis and treatment can reduce morbidity and mortality.

CASE REPORT

A 63 year old female patient with past

history of hypertension and chronic kidney disease came to our emergency department (ED) with history of fever and dry cough since 3 days. On examination patient was conscious, with a pulse rate of 88 beats/min, blood pressure 144/96 mmHg, temperature 100F, Spo2 94% on room air. On auscultation, basal crepts and occasional rhonchi heard on right side. Other systemic examinations were within normal limits. Investigations revealed hemoglobin 11.4 gm/dl, WBC 8700 cells/mm³, platelets 2.2 lakhs /cumm, blood glucose was 133 mg/dl. Arterial blood gas analysis showed pH-7.36, PO₂-155, PCO₂-36, and HCO₃-24. Serum electrolytes, liver function test and kidney function tests were normal. Diagnosed to be having community acquired pneumonia and started on injection Levofloxacin 500mg once daily along with gastric ulcer prophylaxis and was shifted to ward for further management. On third day of admission,

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patient suddenly developed headache and became anxious, confused with tachycardia and tachypnoea. Patient was found to be having hypoglycemia (GRBS-58mg/dl). Immediately 100ml 25% dextrose was infused. Still patient had refractory hypoglycemia hence patient was transferred to ICU for further management. In MICU patient received another 2 doses of 25% dextrose (100mL each) followed by infusion of the same at 30ml/hour. Suspected to be having Levofloxacin induced hypoglycemia, hence Levofloxacin was stopped. Blood glucose (128mg/dl) stabilized to normal on fourth day. Later patient was managed with azithromycin and shifted to ward and discharged home.

DISCUSSION

Levofloxacin is a broad spectrum antibiotic of the fluoroquinolone group. It is used as a sole agent or in combination with other antibiotics in number of systemic bacterial infections (respiratory tract infection, urinary tract infection, cellulitis, prostatitis, tuberculosis and plague). Hypoglycemia is one of the rare side effects of Levofloxacin. It is usually seen within first 3 days of Levofloxacin therapy, but rarely seen even within 24 hours [2].

Exact frequency of hypoglycemia is not known, but in one study it is about 0.08% (0.55% in diabetics and 0.04% in non diabetics). The

mechanism of hypoglycemia is thought to be related to release of insulin from the islet cells of pancreas [3, 4] by blocking ATP sensitive potassium channels. Among Fluroquinolones, gatifloxacin has the greatest inhibitory potential.

Risk factors for hypoglycemia include patients taking sulfonyleureas, insulin and quinine simultaneously or having acute renal failure. The association between Levofloxacin and hypoglycemia can be evaluated using Naranjo's Probability Scale [5]. In our case, the score was +6 which signifies a probable association between Levofloxacin and hypoglycemia.

Treatment is just stopping the Levofloxacin and simultaneous administration of dextrose. In one patient with refractory hypoglycemia a single dose of intravenous octreotide (50mcg) [6] was administered. Levofloxacin induced hypoglycemia is a rare but potentially treatable cause. Early diagnosis and treatment can reduce morbidity and mortality.

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DECLARATION OF INTEREST

None declared.

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