Case Report

Gatifloxacin-induced Severe Hypoglycemia in a Patient with Type 2 Diabetes Mellitus

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Abstract
A case of Gatifloxacin-induced severe and recurrent hypoglycemia in 62-year-old type 2 diabetic patient is presented. Possible mechanisms responsible for hypoglycemia are discussed and the literature on the subject is reviewed. ©

INTRODUCTION
Gatifloxacin is a commonly used antimicrobial agent belonging to fluoroquinolone family. If used in diabetic patients it can occasionally lead to severe hypoglycemia in initial three days and hyperglycemia subsequently.1 A case of Gatifloxacin-induced severe hypoglycemia in type 2 diabetic patients is described here to draw the attention of prescribing doctors to the danger of severe hypoglycemia.

CASE REPORT
Mr. S.K.M. male aged 62 years was having type 2 diabetes for 9 years and was on regular treatment with Tab. Glimepiride 2 mg. twice a day and Tab. Metformin 500 mg. three times a day. He was regularly monitoring his capillary blood glucose at home with a periodically calibrated glucometer and his average fasting and post lunch blood glucose over last two months was 154 mg% and 210 mg% respectively. He consulted his family doctor for burning micturation and fever of four days duration. His routine urine examination showed 30-40 pus cells / hpf. He was put on Tab. Gatifloxacin 400 mg. once a day in morning. Around 30 hours after starting Gatifloxacin, his wife found him in restless and rowdy condition. Random capillary blood glucose at home with a periodically calibrated glucometer and his average fasting and post lunch blood glucose over last two months was 154 mg% and 210 mg% respectively. He consulted his family doctor for burning micturation and fever of four days duration. His routine urine examination showed 30-40 pus cells / hpf. He was put on Tab. Gatifloxacin 400 mg. once a day in morning. Around 30 hours after starting Gatifloxacin, his wife found him in restless and rowdy condition. Random capillary blood glucose was 41 mg%. His food intake was regular and he had taken medicines in correct dosages. He improved after consuming 4 teaspoonfuls of sugar. His afternoon and evening doses of oral antidiabetic agents were withdrawn and Gatifloxacin was continued. He was subjected to urgent HbA1c test to rule out repeated episodes of asymptomatic hypoglycemia. However, these were unlikely as HbA1c was 8.33%. Serum creatinine was 1.4 mg%. Next morning, his fasting plasma glucose was 301 mg%, thus Glimepiride and Metformin were reintroduced in half the doses. (Tab. Glimepiride 1 mg. twice a day and Tab. Metformin 250 mg. three times day. At 3 AM next day, he was again rowdy and irritable, his random capillary blood glucose was 34 mg% and he recovered dramatically after IV infusion of 50 ml. of 25% glucose. Gatifloxacin was discontinued and oral anti-diabetic agents were temporarily stopped and reintroduced 24 hours later in half the original dose. Patient remained asymptomatic and three days after reintroduction of oral antidiabetic agents, his plasma fasting and post lunch glucose levels were 143 mg% and 196 mg% respectively.

DISCUSSION AND CONCLUSIONS
The type 2 diabetic patient described above was regular as regards diet and oral antidiabetic medications, he had reasonably good renal function and was maintaining a steady blood glucose levels before starting Gatifloxacin. Thus he did not have any predisposing or precipitating causes for hypoglycemia other than administration of Gatifloxacin. He had typical and recurrent symptoms of hypoglycemia, which developed about 30 hours after starting Gatifloxacin. Hypoglycemia was well documented by random capillary blood glucose estimation on two occasions. His symptoms improved rapidly after administration of oral sucrose on first occasion and IV glucose on second occasion. The symptoms did not recur after withdrawal of Gatifloxacin. The temporal relation described above suggests that Gatifloxacin was the precipitating factor for hypoglycemia. Cases of Gatifloxacin-induced hypoglycemia have been described in literature.2,3

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Exact mechanism is not known but hypotheses include possible increase in serum insulin level or existence of possible interaction between Gatifloxacin and sulphonylureas. To the best of our knowledge, this is the first case report of gatifloxacin-induced hypoglycemia in Indian literature.

REFERENCES