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Case Study

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A CASE REPORT ON HYPERSENSITIVITY REACTION WITH METFORMIN

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ABSTRACT

Metformin is a biguanide derivative widely used for treatment of diabetic patients. The most common toxic effects of metformin are gastrointestinal (anorexia, nausea, vomiting, abdominal discomfort and diarrhoea). As with other drugs, allergic reactions can occur with metformin also, but these are very rare. A case of hypersensitivity reaction with metformin was reported in adverse drug monitoring centre. A 56-year-old female, newly diagnosed case of Type-2 diabetes mellitus, started on Tablet Metformin 500 mg twice daily, now few days after starting the drug (tablet metformin 500 mg) developed purpuric and skin rashes lesions on her legs, arms and back. Physician was immediately stopped the metformin and patient was put on tablet glimepiride 2 mg. The lesions slowly started subsiding after stopping metformin.

KEYWORDS: Metformin, Skin lesions, Hypersensitivity reaction, Glimepiride.

INTRODUCTION

Type II diabetes, is a heterogeneous group of conditions characterized by tissue resistance to the action of insulin combined with a relative deficiency in insulin secretion.[1]

Initially patients of diabetes can be controlled with diet, exercise and oral glucose lowering agents. Metformin is the only member of the Biguanide class (type of oral hypoglycaemic agent) available for use today. Several mechanisms have been proposed to explain the pharmacologic action of metformin, main action being suppression of hepatic gluconeogenesis. Metformin is generally accepted as the first-line treatment of type 2 diabetes and is currently the most commonly used oral agent for DM II. It is effective as monotherapy and in combination with other hypoglycaemic medications. Biguanides are well absorbed from the gastrointestinal tract. Maximum activity occurs in 4 hours. They are eliminated through urine within 24 hours. The most common side effects of metformin are GI: nausea, indigestion, abdominal cramps and diarrhoea. However, there are also other rare adverse effects of this drug. Here, a rare case of hypersensitivity caused by metformin is reported.[2]

CASE REPORT

A 56-year-old female was brought to the hospital presented to the dermatology OPD with the chief complaints of bilateral purpuric eruptions & skin rashes lesions on her upper and lower extremities and on her legs, arms and back. The patient was recently diagnosed for Type-2 diabetes mellitus in the last 10 days back during a routine clinical check-up. Following were her blood reports: Fasting Blood Sugar (FBS) - 220 mg/dl, Post Prandial Sugar (PPBS) 310 mg/dl, HbA1C–9%, Cholesterol: 258 mg/dl. The physician prescribed tablet metformin 500 mg twice daily (BD), tablet Pantoprazole 40 mg once daily (OD) empty stomach, Capsule B complex once daily (OD) and tablet folic acid once daily (OD) with life style modification. Now a 1 week later patient again visited the medicine OPD; her FBS and PPBS levels were 145 mg/dl and 230 mg/dl respectively. After 3 days of her 2nd visit, patient complained of development of non-pruritic, bilateral purpuric lesions on her legs, arms and back. The lesions kept on increasing in number and involved arms, forearms, thighs, legs and upper and lower back. On examination the lesions were palpable and did not blanch. Capsule B complex was withdrawn. But the skin lesions kept on increasing. On her next day visit tablet metformin was stopped. Tablet Metformin induced hypersensitivity reaction was suspected. Then skin diascopy test (SDT) showed that the lesions did not blanch on pressing with the slide. This gives an idea that the lesions may be because of vasculitis. But since the patient refused to get the skin histopathological examination done, the diagnosis of vasculitis could not be confirmed. Patient was prescribed tablet Fexofenadine, tablet Levocetrizine-Montelukast combination to treat the reaction.

RESULT AND DISCUSSION

Metformin is a very commonly prescribed oral hypoglycaemic drug (oral glucose lowering agent). Common side effects are those related to gastrointestinal tract (nausea, vomiting, diarrhoea, anorexia, abdominal discomfort). It is particularly indicated for use in obese patients having diabetes mellitus. Metformin is considered to be a safe drug. Cutaneous eruptions have been reported with the use of metformin but are very rare.[3]

On reviewing, two cases of leucocytoclastic vasculitis could be found.[4,5] In another case patient developed palpable purpura with metformin but refused for skin biopsy.[6] A case of Psoriasiform drug eruption due to metformin hydrochloride is also reported.[7] One case of leucocytoclastic vasculitis and pneumonitis induced by metformin could be found.[8] In these cases the patient developed reactions few days after consuming metformin and the reaction subsided after stopping the medication.[5,6,7] In few cases reappearance of the reaction after reintroduction of the medicine is seen.[4]

In the present report, the patient refused to get the histopathological examination done. As the lesions started subsiding as the drug was removed, according to Naranjo probability assessment scale, the adverse effects were probably due to metformin.[9]

CONCLUSION

Based on the information provided above, it is concluded that metformin was the probable cause of hypersensitivity reaction in this patient. Hence, hypersensitivity is a potential adverse effect of this commonly prescribed drug and should be suspected and monitored while prescribing it. We have reported this case because of its rarity in clinical practice. As a clinical pharmacist are need to be made aware of these potentially fatal adverse effects associated with drugs via conduction of quality-based seminars, published medical literature, conferences, learning programs and health care camps.

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