

Hypersensitivity reaction with metformin: a case report**Tushar Vashisht¹, C. Dinesh M. Naidu^{1*}, Chhanda Mandal²**¹Department of Pharmacology, ANIIMS, Port Blair, Andaman and Nicobar, India²Department of Dermatology, ANIIMS, Port Blair, Andaman and Nicobar, India**Received:** 19 September 2019**Accepted:** 17 October 2019***Correspondence to:**

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Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.**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 59-year-old female, newly diagnosed case of diabetes mellitus II, started on metformin tablet 500 mg twice daily, developed purpuric skin lesions on her arms, legs and back few days after starting the drug. metformin was stopped and patient was put on glimepiride tablet. The lesions slowly started subsiding after stopping metformin.

Keywords: Hypersensitivity reaction, Metformin, Skin lesions**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.¹ 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. 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.² Here, a rare case of hypersensitivity caused by metformin is reported.

CASE REPORT

A 59-year-old female resident of Andaman and Nicobar Islands presented to the dermatology OPD with the chief complaints of bilateral purpuric eruptions on her upper and lower extremities and back.

The patient was recently diagnosed for diabetes mellitus II two weeks back during a routine clinical check-up. Following were her blood reports: Fasting Blood Sugar (FBS) - 340 mg %; Post Prandial Sugar (PP) - 412 mg %; HbA1C - 11%; Cholesterol: 358 mg%. The physician prescribed tablet metformin 500 mg twice daily, tablet Pantoprazole 40 mg once daily empty stomach, Capsule B complex once daily and tablet folic acid once daily. A week later patient again visited the medicine OPD; her FBS and PP levels were 225 mg% and 337 mg% respectively.

After 10 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. There was purple lesion on lateral side of tongue and lips. 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 visit tablet metformin was stopped. Metformin induced hypersensitivity reaction was suspected. Skin diascopy test 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 Montelukast-Levocetirizine combination to treat the reaction. Following are the pictorial details of her rash.



Figure 1: Palpable purpuric lesions on legs, forearm and on tongue.



Figure 2: Diascopy test showing non-blanching lesions.

DISCUSSION

Metformin is a very commonly prescribed oral hypoglycaemic drug. It is particularly indicated for use in obese patients having diabetes mellitus.³

Metformin is considered to be a safe drug. Common side effects are those related to gastrointestinal tract. Cutaneous eruptions have been reported with the use of metformin but are very rare.³

On reviewing, three cases of leucocytoclastic vasculitis could be found.³⁻⁵ One case of leucocytoclastic vasculitis and pneumonitis induced by metformin could be found.⁶ A case of Psoriasiform drug eruption due to metformin hydrochloride is also reported.⁷ In another case patient developed palpable purpura with metformin but refused for skin biopsy.⁸ In these cases the patient developed reactions few days after consuming metformin and the reaction subsided after stopping the medication.^{4,6,7} 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.

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