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Original Research Paper

Hypersenstivity Reaction to Presugrel – A Case Report

Medicine

KEYWORDS: Hypersensitivity; Presugrel.

N.S. NEKI

Professor of Medicine, Govt. Medical College and Guru Nanak Dev Hospital, Amritsar, Punjab, India

ABSTRACT

Presugrel is an antiplatelet thienopyridine agent known to reduce thrombotic complications in patients with acute coronary syndromes. We report a case of a 60 year old female diagnosed as presugral induced hypersenstivity skin reaction, which subsided on its withdrawl and initiation of clopidogrel as an alternative therapy without any signs of further hypersensitivity.

Introduction

Adverse drugs reactions (ADR) to prescribed medications are major challenges in the continuation of treatment in majority of cases. ADRs are categorised as Ig-E mediated and non Ig-E mediated hypersenstivity reactions. Presugrel is an antiplatelet thienopyridine drug[1]. It was approved in July 2009 by Food and Drug Administration (FDA) since it proved to be beneficial in patients undergoing thrombotic complications[2]. In VIVO, the metabolites of presugrel irreversibly bind to the PZY class of adenosine diphosphate receptors on platelets and inhibit platelet activation and aggregation. Adverse hypersensitivity reactions to clopidogrel are reported to occur in about 1% of patients of which 93% present with a maculopapular rash, which leads to its withdrawl [3,4]. There is structural similarity between Presugrel and clopidogrel, which may be responsible for their cross reactivity. Only few cases of hypersenstivity skin reactions to presugrel have been reported[2]. We report a case of 60 year old female taking Presugrel along with other medications for acute coronary syndrome, who developed skin rash. This rash disappeared after discontinuation of Presugrel

Case Report

A 60 year old female housewife a known case of hypertension on antihypertensive drugs presented with history of severe chest pain and palpitation since 6 days. She was non smoker, non alcoholic, and non diabetic. On probing the history, she was a case of ST segment elevation myocardial infarction documented on ECG and cardiac enzymes (Troponins) and was taking antianginal and appropriate treatment. Her coronary angiography using subeluting stents revealed 75% occlusion in the proximal left anterior descending artery without any significant complications.Before performing coronary angiography, the record showed that she was administered loading dose of 600 mg clopidogrel, 300 mg aspirin and carvediolol. In anticipation of increased risk of stent thrombosis, clopidogrel was stopped on 4th day and she was put on 50 mg daily loading dose of Presugrel with maintenance dose of 10 mg. The patient was stabilised and was discharged on aspirin, Presugrel, atorvastatin, carvediolol, candesartan and spironolactone. But to our surprise, she reported back on 6th day with complaints on whole body rash with pruritic symptoms. On examination her vitals were BP 130/80 mmHg, Pulse 74 beats/min and 2D Echocardiography showing 40% ejection fraction with no thrombosis or vegetation. Laboratory investigations including hemogram, blood sugar, cardiac enzymes, renal, hepatic, lipid, electrolytes profile and X-ray chest were within normal limits. As the patient was taking aspirin without any evidence of hypersenstivity skin reaction, we suspected Presugrel as the cause of skin reaction. Ultimately Preungrel was stopped and patient started on 75 mg daily dose of clopidogrel along with antihistamines and corticosteroids. Rechallenge test was considered but patient refused it. The patient responded well and was discharged in a stable condition. Since then she is on regular follow up without any complaints.

Discussion

Presugrel is a 3rd generation thienopyridine shown to be superior to clopidogrel in preventing stent thrombosis as revealed in TRITON-TIMI 38 trial[1]. The incidence of skin rashes is slightly higher in patients treated with Presngrel (2-8%) as compared to clopidogrel (2-4%) as shown in above trial[1]. Dual antiplatelet therapy with aspirin and thienopyridine is highly beneficial in the prevention of stent thrombosis among patients under percutaneous coronary intervention[5]. When hypersenstivity skin reaction to clopidogrel occurs, alternate modalities include either desenitization to clopidogrel or substitution to another thienopyridine and anticoagulation[3]. But there are no guidelines for managing presugrel induced hypersenstivity skin reactions. Only very few cases of Presugrel induced skin rashes have been reported[3,6]. Regarding treatment options for Clopidogrel hypersentivity reactions, the first one is use of ticlopidine[3]. However it is known to cause neutropenia and is less effective than thienopyridine for prevention of atherosclerotic events and stent thrombosis. The second option is use of warfarin as anticoagulant[3]. Again it is less effective then thienopyridine for preventing stent thrombosis and rather it carries great risk of major bleeding[7]. The third option is desensitization to Presugrel. Our patient refused desensitization. Mutnick[8] reported first case of succesfull desensitization to Presugrel. But this technique of desensitization can not be routinely used due to increased risk of stent thrombosis, process being time consuming and greater need for drug washout period. The last option is to use another antiplatelet like ticagrelor and clopidogrel. But we preferred clopidogrel since ticagrelor was costly. Various clinical trials have shown greater efficacy of clopidogrel over ticagrelor in preventing stent thrombosis [1,5]. Since there is greater structural and mechanism of action similarity between Presugrel and clopidogrel, there is possibility of occurrence of cross reactivity between them. However very little data is available regarding the possibility of cross reactivity between these two drugs[3,9].

But our patient responded well with the use of clopidogrel after discontinuation of Presugrel. There was reasonable temporal relationship between the adverse event and drug exposure. Disappearance of rash occurred on dechallenge. The Naranjo's ADR probability score also confirmed the casuality as probable[10]. Patient is on regular follow up with no fresh complaints.

Conclusion

The rare case is presented here to sensitise the physicians and cardiologists about the cross reactivity between Clopidogrel and Presugrel when switching between these drugs. All ADRs must be reported to the Adverse Drug Reaction Reporting Centres.

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