

Case Report

Pantoprazole Induced Thrombocytopenia: a Case report

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Abstract

Proton Pump Inhibitors serve as the cornerstone of management of Upper Gastrointestinal bleeding. In Nepal, intravenous Pantoprazole is widely used. One of the rare complications of intravenous Pantoprazole is thrombocytopenia which may lead to paradoxical increase in bleeding possibility. Here, we present a 70 year old gentleman who presented with hematemesis and melena and was treated with IV Pantoprazole. The Platelet count started decreasing from the third day onwards following which the patient was switched to Rabeprazole on the fourth day. Platelet count subsequently normalized. Thus, drug induced thrombocytopenia is one of the rare complications that has to be kept in mind with the use of Pantoprazole.

Introduction

Pantoprazole is a widely used drug, especially in the setting of acute upper GI bleed. These agents are generally well tolerated and the most commonly reported adverse effects include headache and mild gastrointestinal symptoms.¹

Similarly, with regards to thrombocytopenia, one factor that can be overlooked, but may be rapidly reversible, is drug-induced thrombocytopenia. The estimated incidence of drug induced thrombocytopenia varies from 5% to 40% in patients receiving heparin to less than 1% in all other patients.²

Though uncommon, there are reported cases in literature describing thrombocytopenia secondary to the use of Pantoprazole. If present, obviously the risk of bleeding would increase. At the same time, Drug induced Thrombocytopenia is hard to prove, however George et al.³ developed a criteria for assessing Drug induced thrombocytopenia. We present a

case of thrombocytopenia secondary to Pantoprazole.

Case Report

A 70 year old male, a known case of Alcoholic Liver Disease with Cirrhosis of Liver with Portal Hypertension, presented to the ER with hematemesis of 2 day duration and melena of 1 day duration.

Patient was hemodynamically unstable, was managed with IV fluids, 2 units of Whole Blood Transfusion and injection Octreotide and Pantoprazole. Pantoprazole was given as a bolus of 80 mg, followed by 8 mg/hour. The patient was stabilized. The Pantoprazole drip was continued for first 3 days. However, we noticed a trend of falling platelets and by the 4th day, patient started having hematemesis and hematochezia again (Table 1). We ruled out infectious causes of thrombocytopenia and on suspicion, stopped Pantoprazole. He was again resuscitated with fluids, Blood transfusion, inj. Octreotide and we added Inj. Rabeprazole.

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Table 1: Trend of Platelet Count

| Day | 1 | 3 | 4 | 5 | 6 | 8 |
|-------------------------------|--------|-------|-------|-------|--------|--------|
| Platelets (/mm ³) | 274000 | 60000 | 55000 | 55000 | 111000 | 190000 |
| Hemoglobin (gm/dl) | 6.1 | 7.4 | 9 | 8.2 | 6 | 7.6 |

The patient again stabilized and we noticed a gradual rise in Platelet count starting from day 6 i.e. 2 days after stopping Pantoprazole and beginning Rabeprazole. Once bleeding subsided, UGI endoscopy was done which revealed 3 columns of grade II-III esophageal varices with Fundal Varices and portal hypertensive gastropathy.

Discussion

The most likely cause of thrombocytopenia in our case was determined to be Pantoprazole.

The patient had a normal platelet count on admission with no splenomegaly, ruling out platelet sequestration and underproduction.

The platelet count continued to fall 3 days after the 2 units of Whole Blood were given and the hemoglobin remained stable, which makes dilutional thrombocytopenia unlikely. Similarly, the possibility of infection was also ruled out after clinical examination and lab investigations.

The criteria for assessing Drug induced Thrombocytopenia was given by George et al.³ (Table 2).

Table 2: Criteria for assessing Drug induced Thrombocytopenia

| Criteria | Description |
|-------------------|---|
| 1 | 1) Therapy with the candidate drug preceded thrombocytopenia and 2) recovery from thrombocytopenia was complete and sustained after therapy with the drug was discontinued |
| 2 | 1) The candidate drug was the only drug used before the onset of thrombocytopenia or 2) other drugs were continued or reintroduced after discontinuation of therapy with the candidate drug with a sustained normal platelet count |
| 3 | Other causes for thrombocytopenia were excluded |
| 4 | Re-exposure to the candidate drug resulted in recurrent thrombocytopenia |
| Level of evidence | |
| I | Definite: criteria 1, 2, 3, and 4 met |
| II | Probable: criteria 1, 2, and 3 met |
| III | Possible: criterion 1 met |
| IV | Unlikely: criterion 1 not met |

Our patient met Criteria 1, 2 and 3. The only change in therapy was pantoprazole, and other causes of thrombocytopenia were ruled out. However, looking at the severity of the disease re-exposure to the candidate drug was not tried. Thus, our patient represents a “probable” case of Pantoprazole induced Thrombocytopenia. Watson et al.⁴ described two cases of thrombocytopenia associated with the use of

only Pantoprazole 40 mg in comparison to 8 mg/hour in our case. They did an objective causality assessment using the Naranjo probability scale⁵ which revealed a probable relationship between thrombocytopenia and Pantoprazole in both of the cases. The Naranjo probability scale⁵ is the standard tool used to evaluate drug-induced adverse events.

The mechanism of this suspected adverse drug reaction is not well understood. The acute changes in the platelet count are not consistent with decreased production via bone marrow suppression; therefore, the mechanism could be via increased destruction of platelets.

Conclusion: Drug induced thrombocytopenia is a critical complication of use of Pantoprazole. Though rare, the possibility of the same should always be considered, especially in cases of upper gastrointestinal bleed where the risk of bleeding is increased in the presence of thrombocytopenia.

References

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