Case study

PANTOPRAZOLE-INDUCED THROMBOCYTOPENIA IN A PATIENT WITH UPPER GASTROINTESTINAL BLEEDING: A CASE REPORT

ABSTRACT:

Although it seems relatively rare, pantoprazole-induced thrombocytopenia is a potentially serious side effect.PPIs, which have the potential to stabilize blood clot formation, are frequently used in the treatment of upper gastrointestinal bleeding (UGIBs). Helicobacter pylori infection, stomach ulcers, erosive esophagitis, and stress ulcer prophylaxis in high-risk critically ill individuals are theindications for PPI therapy.In intensive care units (ICUs), stress ulcer prophylaxis with acid-suppressing therapy is frequently prescribed.PPIs are a class of medications that are routinely used in intensive care units (ICU) to treat and prevent stress ulcers(stress-related mucosal disease).The mainstay of treatment for peptic ulcer bleedingincludes proton pump inhibitors (PPIs), with consensus recommendations currently prescribing high-dose intravenous (IV) PPI therapy (IV bolus followed by continuous therapy).[2] PPIs have been demonstrated to lessen symptoms of bleeding at index endoscopy and to lessen rebleeding following endoscopic hemostasis. Although PPIs are well-tolerated and frequently given to patients with acute UGIBs, serious side effects could happen. Patients who used PPIs for a brief period of time experienced a variety of moderate systemic symptoms.When taking PPIs for less than two weeks, serious adverse effects typically start off moderate. However, as treatment time goes on, side effects have been found to become more frequent and severe. Patients with UGIBs may experience significant hemodynamic instability and rebleeding risks due to thrombocytopenia. Here, we present a case of thrombocytopenia that developed after pantoprazole was introduced. After the drug was discontinued, the thrombocytopenia was recovered.According to the Naranjo probability scale causality assessment, the relationship between thrombocytopenia and pantoprazole is found to be probable.We emphasize this case to raise awareness about drug-induced thrombocytopenia.

Keywords: Proton pump inhibitors,pantoprazole,rare Adverse Drug Reaction,thrombocytopenia, pantoprazole-induced thrombocytopenia.

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INTRODUCTION:

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PPIs are a class of medications that are routinely used in intensive care units (ICU) to treat and prevent stress-related mucosal disease.Helicobacter pylori infection, stomach ulcers, erosive esophagitis, and stress ulcer prophylaxis in high-risk critically ill individuals are theindications for PPI therapy.In intensive care units (ICUs), stress ulcer prophylaxis with acid-suppressing therapy is frequently prescribed.PPIs have the potential to stabilize blood clot formationin upper gastrointestinal bleeding (UGIBs).The mainstay of treatment for peptic ulcer bleedingincludes proton pump inhibitors (PPIs). PPIs have been demonstrated to lessen symptoms of bleeding at index endoscopy and to lessen rebleeding following endoscopic hemostasis. Although PPIs are well-tolerated and frequently given to patients with acute UGIBs, serious side effects could happen.Although it seems relatively rare, pantoprazole-induced thrombocytopenia is a potentially serious side effect.

CASE REPORT:

A 76 year old male patient was admitted in the cardiology department with the chief complaints of generalised body pains, weakness, decreased appetite since10 days,disturbed sleep,blood in stool, and black stools since 2 days. He has a past medical history of Diabetes mellitus,hypertension, Coronary artery disease S/P PTCA with stent (LAD)in 2022.

The patient 1 week old report of UGIE (Upper Gastrointestinal endoscopy) finds whitish mucosal plaques in the esophagus, and erosions are seen in the fundus and body of the stomach.linear mucosal erythema was seen.

Diagnosis from UGIE: Esophagealcandiasis, GAVE (Gastric antral vascular ectasia), erosivegastritis, Adv:APC(Argon plasma coagulation)

The patient was already on PPI therapy Pantoprazole before admission.

The patient has a history of melena and a history of 8 units of PRBC transfusion in the past but still his platelet count levels were continuously decreasing.

On examination, the vitals are found to be:

TEMP: 98 F	CVS: S1, S2 normal.
BP: 120/60 mmHg	RS: BAE+, clear
PULSE:78 b/min	P/A : Soft .

LAB INVESTIGATIONS:

HEMATOLOGY:

PARAMETERS	LAB VALUES	NORMAL RANGE
Haemoglobin	**8.0** ↓	14-17
Red Blood Cells	**2.8**↓	4.5-5.5
WBC	5600	4000-11000
Neutrophils	62	40-70
Lymphocytes	30	20-40
Monocytes	05	2-10
Eosinophils	03	1-6

Platelets	**60,000** ↓	1.5-4.5

RENAL FUNCTION TEST:

PARAMETERS	LAB VALUES	NORMAL RANGE
UREA	32	10-45
CREATININE	0.8	0.6-1.5

SERUM ELECTROLYTES:

PARAMETERS	LAB VALUES	NORMAL RANGE
SODIUM	144	136-145
CHLORIDE	**106**	95-105
POTASSIUM	3.6	3.5-5.0

ULTRASOUND SCAN OF ABDOMEN AND PELVIS:

Non-obstructive calculi in urinary bladder

ECG:

Sinus rhythm with occasional premature ventricular complexes, left axis deviation, (QRS axis<=30) premature QRS complexes.Abnormal ECG

Advised: NBM from midnight, plan for endoscopy if Hb >8g ,Plan for 1 PRBC transfusion if Hb <8 gm

TREATMENT GIVEN:

S.NO	DRUG	GENERIC NAME	DOSE	ROUTE	FREQ
1.	Inj. PAN	Pantoprazole	40 mg	IV	BD
2.	Inj. Lasix	Furosemide	20 mg	IV	BD
3.	Tab Atorvas	Atorvastatin	10 mg	PO	OD
4.	Tab.Ivabrad	Ivabradine	5 mg	PO	OD
5.	Tab. Aldactone	Spironolactone	25 mg	PO	OD
6.	Syp.Cypon	Cyproheptadine+Tricholine Citrate+Sorbitol	10 ml	PO	BD
7.	DNS+MVI	Dextrose normal saline Multivitamin	40 ml/ hr	IV	OD
8.	Tab.Flucanazole	Flucanazole	150 mg	PO	BD
9.	Tab Farobact	Faropenem	200mg	PO	BD
10.	Syp. Citralka	Disodium Hydrogen Citrate	10 ml	PO	TID

At first, the doctors couldn't understand the reason for decreasing platelet levels despite giving PRBC transfusions but then finally they diagnosed the condition as pantoprazole drug-induced thrombocytopenia when the levels were decreasing when pantoprazole was reintroduced after admission.

Then on day 2, the physician on suspicion withheld pantoprazole andswitched to Inj. Lysomep 40 mg and Inj. Rantac 150 mg (2 cc) IV OD. Then the patient was given another PRBC infusion. After the drug pantoprazole was withdrawn, the patient's platelet levels improved.

Discussion: The most likely cause of thrombocytopenia in our case was determined to be Pantoprazole. The mechanism of drug-induced thrombocytopenia is often poorly understood.[5]The mechanism could be via increased destruction of platelets. Proton pump inhibitors are generally not strongly suspected as a cause of thrombocytopenia.However, according to the Naranjo probability scale causality assessment, the relationship between thrombocytopenia and pantoprazole is found to be probable.[5]This patient represents a "probable" case of Pantoprazole induced Thrombocytopenia.The Naranjo probability scale is the standard tool used to evaluate drug-induced adverse events.Drug induced thrombocytopenia is a critical complication of the use of Pantoprazole.

Conclusions: This case helps elucidate the rare situation in which PPI therapy can induce severe thrombocytopenia.Drug-induced thrombocytopenia with pantoprazole represents a potentially severe adverse effect which can be a cause of severe morbidity and mortality if left unaddressed.Though rare, the possibility of the same should always be considered, especially in cases of upper gastrointestinal bleeding where the risk of bleeding is increased in the presence of thrombocytopenia. Thus, drug induced thrombocytopenia is one of the rare complications that have to be kept in mind with the use of Pantoprazole. This supports the judicious prescribing of pantoprazole and possibly other proton pump inhibitors.

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