PHARMACOLOGIC INTERVENTION BY HOSPITAL PHARMACIST FOR LEUCOPENIA DUE TO TAZOBACTAM/PIPERACILLIN IN THE POSTPARTUM PERIOD: A CASE REPORT

Authors: Haruna Iwazawa, Takakiyo Tatsumichi, Kazunori Yamaguchi, Hiromi Ichinose, Miyuki Hariki, Junko Tomita, Takahiro Motoki, Masato Kaji, Shinji Kosaka and Hitoshi Houchi.

Department of Pharmacy, Kagawa University Hospital

5PSQ-024 J01 - Antibacterials for systemic use

Background

Tazobactam/piperacillin (TAZ/PIPC), indicated for pneumonia and intra-abdominal abscess in Japan, is recommended as a single-drug therapy, together with carbapenems, in the guidelines for intraabdominal infection published by the American College of Surgeons and Surgical Infection Society in 2010 in the United States. Although diarrhea is a known common adverse reaction of this drug, there are no reports of leukopenia after treatment with this drug in Japan.

Objectives

We observed the case of a postpartum woman who had leukopenia caused by TAZ/PIPC used for intraabdominal infection. We have reported an improvement in symptoms owing to pharmacist intervention.

Materials and methods

A 32-year-old woman had continuous bleeding due to placental abruption after a normal delivery and underwent total hysterectomy. On Day 9, as *Bacteroides fragilis* was found in a blood culture and was suspected to be caused by intraabdominal infection, TAZ/PIPC was initiated. A reduced white blood cell count persisted following the start of the therapy, with leukopenia reported (1.45×10^9/μL) on Day 22. As leukopenia was considered to be caused by TAZ/PIPC, we proposed discontinuation of the drug and the use of meropenem as an alternative. Leukopenia and intraabdominal infection improved after switching to meropenem. On Day 30, meropenem therapy was completed. On Day 38, the patient was discharged.

Results

This patient had leukopenia on Day 14 of treatment with TAZ/PIPC and her white blood cell count increased after drug discontinuation. We considered this event an adverse drug reaction caused by TAZ/PIPC, based on a previous report in which patients develop leukopenia, on average, on Day 15 of TAZ/PIPC treatment. As the patient was in the postpartum period, we proposed meropenem as an alternative to allow the patient to continue to breast feed, because a lower proportion of this drug is transferred to breast milk .

Table.1 Laboratory data on Day 4

Blood cell count			Biochemistry		
WBC	9840	/μL	TP	6.4	g/dL
Seg	83.2	%	ALB	3.0	g/dL
Eosin	0.0	%	AST	16	U/L
Baso	0.2	%	ALT	8	U/L
Lymph	11.7	%	LDH	184	U/L
Mono	4.9	%	BUN	5.6	mg/dL
RBC	404	$\times10^4$/μL	Cr	0.37	mg/dL
HGB	10.8	g/dL	eGFR	157.3	mL/min
PLT	20.3	$\times10^4$/μL	CRP	5.68	mg/dL

Figure.1

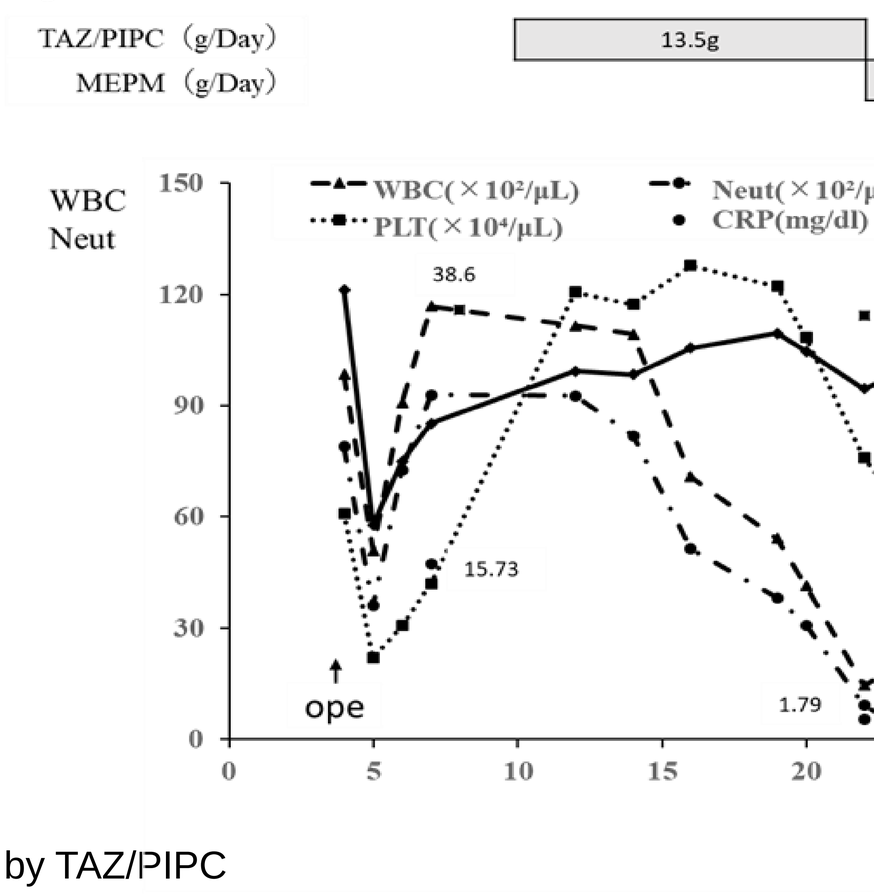

Table.2 Characteristics of patients with leukopenia induced by TAZ/PIPC

Authors	Date,Country	Age,Gender	Dosage of TAZ/PIPC	Time to onset	Side effect	Treatment progress
Kirsty Wai Chung Lee	2009, Hong Kong	60 years old, men	2.25 g every 8 hours	26 days	PLt:2(10^9/L)	leave hospital of lighthearted
Hong Chen	2016, china	74 years old, men	4.5g every 8 hours	7 days	PLT :20(10^9/l) WBC:3.1 (10^9/l)	leave hospital of lighthearted
Macwilliam JL	2012, UK	48 years old, women	4.5g every 8 hours	22 days	PLT:20(10^9/l)	leave hospital of lighthearted
Guillermo Ruiz Irastorza	1996, spain	18 years old, women	4.5g every 8 hours	20 days	PLT :79(10^9/l) WBC:1 (10^9/l)	leave hospital of lighthearted

Conclusion

For patients treated with TAZ/PIPC, pharmacists not only need to check the dosage and administration, but should be actively involved in the proposal of blood tests and the assessment of test results, to try to avoid serious adverse drug reactions such as leukopenia.