International Journal of Basic & Clinical Pharmacology
Vineeth VK et al. Int J Basic Clin Pharmacol. 2023 Sep;12(5):752-754
http://www.ijbcp.com
pISSN 2319-2003 | eISSN 2279-0780

DOI: https://dx.doi.org/10.18203/2319-2003.ijbcp20232576

Case Report

Anaphylaxis to oral misoprostol in a term pregnant patient who is non-allergic to vaginal misoprostol-a case report

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Received: 10 June 2023
Accepted: 07 July 2023

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ABSTRACT

Misoprostol (PGE1) is a drug that is very commonly used in obstetrics for labour induction. Apart from its side effect of causing congenital malformations in offspring of users who have unsuccessfully used it as an abortifacient, it is considered a safe drug with few side effects. We here report a severe hypersensitivity reaction to misoprostol in a 33-year-old term pregnant patient who is non-allergic to vaginal misoprostol. The patient developed anaphylactic features like swelling of lips, low voice due to laryngeal oedema, and bradycardia. Prompt administration of adrenaline and emergent caesarean section allowed for the safe delivery of the neonate. When inducing labour, quick identification and treatment of anaphylaxis and hypersensitivity reactions are necessary to prevent maternal and neonatal morbidity and mortality.

Keywords: Anaphylaxis, Misoprostol, Case report, Hypersensitivity, Term pregnancy

INTRODUCTION

Anaphylaxis during pregnancy, labour, and delivery can be catastrophic for the mother and, especially, the infant. Symptoms and signs can include intense vulvar and vaginal itching, low back pain, uterine cramps, foetal distress, and preterm labour. During the first 3 trimesters, aetiologies are similar to those in non-pregnant women. During labour and delivery, common aetiologies are beta lactam antibiotics, natural rubber latex, and other agents used in medical and perioperative settings.[1]

Misoprostol (PGE1) is a drug, which is commonly used in obstetrics. It is used in treatment of missed abortion, incomplete abortion, cervical preparation before surgical evacuation, induction of labour and postpartum haemorrhage. It acts through its effect on cervix as a ripening agent and as an uterotonic agent.[2] The WHO recommended the use of 25 µg oral misoprostol 2 hourly or 25 µg vaginal misoprostol 6 hourly for labour induction at term. A Cochrane review of randomized clinical trials (RCTs) concluded that oral misoprostol is as effective as vaginal misoprostol, results in fewer caesarean sections than vaginal dinoprostone, and the dose should be 20 to 25 µg of oral misoprostol in solution.[3]

Anaphylaxis to misoprostol is a very rare occurrence when pregnant patients are considered.[4] Usually, if a patient is allergic to one particular preparation of a drug, (e.g., injection) patient will be allergic to other preparations also (e.g., oral tablet form). Here, we are reporting a case of anaphylaxis to oral misoprostol in a term, pregnant patient who is non-allergic to vaginal misoprostol.

CASE REPORT

A 33-year-old second gravida with term pregnancy was admitted for induction in view of pre mature rupture of membranes (PROM). Her first delivery was also by induction with vaginal misoprostol three years back. The patient was administered misoprostol (25 microgram)

orally. After 30 minutes of administration, patient developed swelling of lips, low voice due to laryngeal oedema and shivering. On examination, her pulse rate was 45/minute, blood pressure was 180/100 mm Hg and flushing was present over face. Injection adrenaline intramuscularly, injection pheniramine maleate intramuscularly and injection hydrocortisone intravenously was administered immediately. She was supported on IV fluids and oxygen administered in propped up position. Her vitals became stable and her oedema was reduced. The patient was then for emergency caesarean section. The intra-operative and post-operative period was uneventful. The patient's biochemical and hematologic profile before and after this episode revealed no abnormality (Table 1). Mother and baby were discharged healthy on post-operative day 4 as per the protocol.

Table 1: Laboratory report of the patient.

Test name	Result	Normal values
Haematology		
Erythrocytes		
Haemoglobin	11.2 gm%	13-18 gm%
Platelet count	2.33 lakhs/cumm	1.5-4.5 lakhs/cumm
Serum		
LFT		
Bilirubin total	0.5 mg/dl	Adult-0.1-1.2
Bilirubin direct	0.09 mg/dl	0.1-0.5 mg/dl
Bilirubin indirect	0.41 mg/dl	0.1-1.0
SGOT	23.0 U/L	<46 U/L
SGPT	13.6 U/L	<49 U/L
Alkaline phosphatase	483.0 U/L	80-306 U/L
Total protein	5.96 gm/dl	6.0-8.0 gm/dl
Albumin	2.79 gm/dl	3.5-5.0 gm/dl
Globulin	3.2 gm/dl	2.0 -3.5 gm/dl
A/G ratio	0.9	1.1-2.2

DISCUSSION

Among immunological reactions, the immediate type 1 anaphylactic reaction is due to biologically active materials that are released from mast cells sensitized by specific immunoglobulin E antibodies. The characteristic symptoms are shortness of breath, bronchospasms, soft-tissue swelling, edema hypotension, itching, redness of the skin, wheezing, nausea, vomiting, diarrhea, cramps, and, in some cases, shock on exposure to various agents like drugs, chemicals, paints, solvents, pollen grain.[5]

Madaan et al reported the case of a 32-year-old primi-gravida who presented at 12 weeks of gestation with a missed abortion.[6] She experienced a severe hypersensitivity reaction beginning with symptoms such as shivering, an intense burning sensation, and feeling of warmth over the face, hands, and feet 20 minutes after intravaginal placement of 800 µg misoprostol. A case of anaphylactic shock and mycotic necrosis after treatment with artotec, a combination of diclofenac sodium with misoprostol has been reported whereas severe hypotension and anaphylactic shock was reported after receiving vaginal misoprostol for cervical ripening prior to hysteroscopic myomectomy.[7,8] On the contrary, various studies have reported protective effect of misoprostol in allergic diseases. Babakhin et al has shown that misoprostol can inhibit basophil histamine release indicating a potentially beneficial role of PGE1 analogues as pharmacotherapy for allergic diseases.[9]

In our case, patient did not show any allergic symptoms when she was induced with vaginal misoprostol during her first delivery but developed anaphylaxis to oral misoprostol. Whether the first exposure to vaginal misoprostol resulted in genital allergy is unknown as many cases remain undetected.[10] Oral misoprostol had a significantly greater peak plasma concentration and a shorter duration to maximum concentration than either rectal or vaginal misoprostol.[11,12] In patients with prior exposure to the drug, a so-called accelerated immunological reaction may occur in 2 to 72 hours.[13] This could possibly explain the patient developing anaphylaxis to oral misoprostol.

The essence of management of allergic drug reactions lies with the three sequential steps of anticipation, diagnosis, and prevention. Anticipation of all adverse drug reactions is the most crucial of the three and places the physician and patient in the best possible position to diagnose the adverse effects at the earliest warning. Anaphylaxis to delivery time is also very important for the survival of neonate in case of misoprostol anaphylaxis occurring during labor induction. Delay may cause irreversible brain damage and even death of the neonate.

CONCLUSION

Health care providers must be aware of uncommon reactions to medications used to induce labor. Drug history should be taken in detail with special emphasis on mode of drug administration when patient has a previous history of drug allergy. Intravenous line, oxygen mask, emergency drug tray should be kept ready before starting induction. Above all, induction should be done only in that hospitals were round the clock anesthetist's and neonatologist's service is available.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

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Cite this article as: Vineeth VK, Jose M. Anaphylaxis to oral misoprostol in a term pregnant patient who is non-allergic to vaginal misoprostol-a case report. Int J Basic Clin Pharmacol 2023;12:752-4.