Introduction

Anaphylaxis is a systemic and severe Type I hypersensitivity reaction mediated by IgE. It is one of the most severe adverse drug reactions and can be fatal, if not identified early and treated promptly. Almost any drug can cause anaphylaxis; however, antibiotics like penicillin group of drugs are the most commonly implicated. Other medications which are implicated are nondepolarizing neuromuscular blockers such as rocuronium, nonsteroidal anti-inflammatory agents, and ionic radiocontrast media.[1] Ranitidine is a commonly used H2 (Histamine Type 2) receptor blocker and is considered to be a safe drug with few side effects. We report a rare case of anaphylaxis induced by parenteral ranitidine administered preoperatively.

Case Report

A 24-year-old male, with no known comorbidities, presented with complaints of pain left flank of 1-day duration. Pain was colicky, severe, associated with vomiting and radiating from the loin to the groin. There was no history of hematuria, graveluria, or any other significant past or family history. Examination revealed pulse rate ~ 110/min, blood pressure ~ 146/90 mm Hg, and left renal angle tenderness. Rest of the general and systemic examination was within normal limits. Hematological and biochemical parameters including blood urea and serum creatinine were within normal limits. Ultrasound of the kidney, ureter, and bladder revealed left distal ureteric calculus with hydroureteronephrosis and right renal calculus with right hydroureteronephrosis. He was planned for ureteroscopic lithotripsy (left) with placement of double J stent under general anesthesia. He was accepted for surgery in American Society of Anesthesiologist Grade I. Patient was given premedication with injection ranitidine 50 mg, injection fentanyl 30 mg, and injection glycopyrrolate 2 mg intravenous (IV). After preoxygenation, induction was done using ketamine and succinylcholine and endotracheal tube inserted. Immediately after induction patient developed severe hypotension (80/40 mm Hg), bronchospasm, and tachycardia. Surgery was abandoned, and patient managed with mechanical ventilation and adrenaline infusion initiated at the rate of 0.3 mg/kg/min, increased to 1 mg/kg/min and tapered after 12 h and patient recovered. Patient was again taken up for surgery after 1 month with similar protocol, and he again developed anaphylactic reaction. In view of repeated, severe anaphylactic reactions - the patient was referred to Dermatology Department for further evaluation. We reviewed his entire drug history and elicited that 1 year ago he developed

ABSTRACT

Perioperative anaphylaxis is a rare and catastrophic event. Anaphylaxis during perioperative period changes the entire management plan for the patient. Since a large number of drugs are administered to the patient during the short span of time, it becomes difficult to identify the culprit drug. This has an impact on the management of the patients who have to undergo surgery. Ranitidine is considered a safe drug used in perioperative period; however, rarely it can lead to perioperative anaphylaxis. We present one such case of ranitidine-induced perioperative anaphylaxis which was successfully managed by early diagnosis and avoidance of drug.

KEY WORDS: Adverse drug reaction, Perioperative anaphylaxis, ranitidine

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abdomen pain for which he was given IV injection ranitidine 50 mg, and immediately thereafter he developed urticaria which was treated with IV injection hydrocortisone and promethazine. During his hospital stay, he developed flushing of the face along with chest tightness on administration of IV ranitidine. In view of his repeated reaction to ranitidine, ranitidine was suspected as the cause of his episodes of anaphylaxis. The adverse drug reaction was assessed on the basis of prevalent causality scales. Reaction had a score of 7 in Naranjo probability scale and certain cause in the WHO – UMC causality category [Table 1]. He successfully underwent ureteroscopic lithotripsy under subarachnoid spinal block using 2.5 ml bupivacaine and was discharged with caution of avoiding ranitidine in future.

**Discussion**

Perioperative anaphylaxis is a rare event. It is difficult to establish the exact cause of anaphylaxis in these patients as multiple drugs, which are known to cause anaphylaxis, are administered simultaneously in a short period of time. Drugs such as muscle relaxants, latex, antibiotics, hypnotics, and induction agents are the most common causes of perioperative anaphylaxis. Ranitidine is a commonly used H₂ receptor blocker. It is used in acid peptic disease, as a preoperative premedication and for the prophylaxis of stress ulcers. It has an excellent safety profile. Common adverse effects of ranitidine are headache, drowsiness, decreased sex drive, nausea, and vomiting. Various authors have reported ranitidine-induced anaphylaxis. Antonicelli et al. in 2012 and Sripriya et al. in 2013 have reported intraoperative anaphylaxis due to ranitidine. Anaphylaxis to ranitidine can occur at the first exposure, or it can occur after previous minor reactions leading to sensitization. Presence of raised specific IgE to ranitidine has been reported in many of these patients who developed anaphylaxis.

We presented a case in which a commonly used drug such as ranitidine was presumably a cause of repeated perioperative anaphylaxis, and the patient underwent successful surgery when ranitidine was avoided. It is imperative to keep a high index of suspicion in perioperative anaphylaxis and in our setting, good history taking even in the absence of definitive tests, can result in successful outcome and prevention of a potentially fatal event.

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**Conflicts of Interest**

There are no conflicts of interest.

**References**

1. Available from: http://www.aaaai.org/conditions-and-treatments/library/at-a-glance/anaphylaxis.aspx. [Last accessed on 2015 Jul 07].
2. Naranjo CA, Busto U, Sellers EM, Sandor P, Ruiz I, Roberts EA, et al. A method for estimating the probability of adverse drug reactions. Clin Pharmacol Ther 1981;30:239-45.
3. Laxenaire MC, Mertes PM. Groupe d'Etudes des Réactions Anaphylactoïdes Peranesthésiques. Anaphylaxis during anaesthesia. Results of a two-year survey in France. Br J Anaesth 2001;87:549-58.
4. Chopra D, Arora P, Khan S, Dwivedi S. Anaphylaxis following intravenous ranitidine: A rare adverse reaction of a common drug. Indian J Pharmacol 2014;46:234-6.
5. Antonicelli L, Stagnozzi G, Massaccesi C, Manfredi M, Valentini M, Campi P. Intraoperative anaphylaxis: A case report of allergy to ranitidine. Eur Ann Allergy Clin Immunol 2012;44:233-5.