

Localized Urticaria with Intravenous Ondansetron: A Case Report

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Ondansetron is an effective antiemetic agent widely used to control nausea and vomiting associated with malignancy and surgery. Although hypersensitivity reactions have been reported with ondansetron in connection with emetogenic chemotherapy, it has been rarely addressed under perioperative settings. This case highlights the need of increased awareness among anaesthesiologists regarding the allergic potential of ondansetron and emphasize for judicious administration of this drug with adequate emergency backup.

Keywords: Allergy, Hypersensitivity, Ondansetron, Urticaria

INTRODUCTION

Ondansetron hydrochloride, a selective serotonin (5-HT₃) receptor antagonist, is widely used to manage nausea/vomiting associated with malignancy and surgery. Commonly reported adverse effects are headache, constipation or diarrhoea. Hypersensitivity reaction to ondansetron is a rarely reported side effect. We describe an episode of isolated localized urticarial rash due to premedication of ondansetron in a patient posted for inguinal hernia repair.

CASE

A 22 year old female was scheduled for inguinal hernia repair under spinal anaesthesia. She had no history of any previous allergic manifestations, or hyperactive airway diseases. Immediately after premedication with Ondansetron (4 mg IV), she developed localized redness and itching accompanied by an isolated urticarial rash in the vicinity of intravenous catheter (Figure 1). There was no accompanying respiratory distress or hypotension. She was treated with hydrocortisone (100 mg IV) and chlorpheniramine maleate (20 mg IV) after which wheal subsided within a few minutes. After 1 hr of closed observation, surgery was started and she remained asymptomatic for the rest of perioperative period. On further enquiry, she gave a negative history of any previous exposure to 5-HT₃ antagonist medications. Subsequently skin/intradermal tests were performed to confirm the sensitivity to ondansetron. Skin prick test (2 mg/ml concentration) demonstrated a negative response and IgE levels were normal. However, intradermal test showed a positive wheal reaction (3 times of initial papule at 30 min) at a concentration

of 0.02 mg/ml (10 times dilution). Five control cases were also tested in a similar fashion but none of them demonstrated a positive reaction with either test.

DISCUSSION

5-HT₃ receptor antagonists are extensively used for prevention of nausea and vomiting. Although they have a wide margin of safety, frequently reported side effects are constipation, dizziness and headache. Other reported side effects include chest pain, dystonia, and generalized tonic-clonic seizures.¹⁻⁴ Recently, US Food and Drug Administration has issued a Medwatch Safety Alert for ondansetron in patients with congenital Long QT syndrome. Emphasis has been laid for determination of QT interval prolongation effect of ondansetron. Both IgE-mediated and non-IgE-mediated hypersensitivity reaction can occur with above drug.⁵⁻⁸ Reported symptoms include generalized skin reaction or classic anaphylactic/anaphylactoid reactions including respiratory distress and hypotension.⁷⁻¹⁰ Uniqueness of our case is the development of an isolated localized urticarial wheal near to injection site in absence of any other generalized reactions. It was successfully treated by steroid/antihistaminic administration without any need of epinephrine or cardiorespiratory support. Similar results have been obtained by Mehra et al after generalized urticaria due to ondansetron administration in chemotherapy induced nausea and vomiting.¹¹

Unfortunately, there are no specific dermal/laboratory tests to confirm the sensitivity to an allergic matter. Prior sensitization of an antigenic substance is required for IgE-mediated anaphylactic reaction. However, non-immunologic induction of urticarial rash can also occur by

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Figure 1: Localized urticaria on the forearm

direct mast-cell degranulation without IgE-mediated chain reaction.¹² As our patient had no previous exposure to ondansetron, this reaction can be better classified as an anaphylactoid reaction in presence of normal IgE levels.

Previous reports show that some degree of cross-reactivity do exists among various 5-HT₃ antagonists.¹³ This has been contradicted by a report in which an isolated urticaria to ondansetron was successfully treated with granisetron.⁹ Both ondansetron and tropisetron share an indole heterocycle, whereas ondansetron and granisetron do not. It has been proposed as the possible cause of absent cross-reactivity between the latter two drugs. However, further research is required before drawing any final conclusion.

Thus, considering the anaphylactic potential of ondansetron, anaesthesiologists should always consider the possibility of hypersensitivity with this drug while taking the allergic history of the patients. We also advocate that ondansetron therapy should be always be supported by all emergency drugs and equipments.

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