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RESEARCH LETTER

Hypersensitivity to lansoprazole with tolerance to other proton pump inhibitors: Does cross-reactivity between proton pump inhibitors really exist?

To the Editor,

A 39-year-old female patient was referred to our allergy and immunology department with a history of severe anaphylactic reaction to lansoprazole. The patient was prescribed lansoprazole for peptic ulcer and gastroesophageal reflux disease six years ago. After using lansoprazole for one year without any problem, she developed generalised cutaneous rash and itching 30 min after taking the drug. At this time, she was not taking any other medications. After the first allergic reaction, the patient was unbelievably misconducted by her doctors and used the same drug three times with different commercial names. She experienced episodes of urticaria/angio-oedema with chest tightness and fainting shortly after taking the drug on each occasion. Only in the second reaction she had lansoprazole together with another drug (60 mg Asemetasin tablet).

Skin prick tests (SPT) with omeprazole (40 mg/mL), lansoprazole (30 mg tablet), pantoprazole (40 mg tablet), esomeprazole (40 mg tablet) and rabeprazole (20 mg tablet) were performed on the volar side of the forearm. Reactions were considered positive when a wheal greater than 3 mm in diameter was developed in 15 min. Intradermal test (IDT) with omeprazole (1 mg/mL and 4 mg/mL) and rabeprazole (1/10, 1/100) were also performed. Results were considered positive when wheals greater than 5 mm were present. Histamine was used as a positive control and normal saline as a negative control for the SPT and IDT. We observed an immediate positive reaction to lansoprazole with SPT (4 mm × 5 mm wheal). SPT and IDT for other proton pump inhibitors (PPIs) were negative.

Controlled oral challenge tests were performed. Increasing doses of omeprazole (5, 10, and 20 mg), pantoprazole (5, 10, 20 and 40 mg), esomeprazole (5, 10, 20 and 40 mg), rabeprazole (5, 10, and 20 mg) and other culprit drug Asemetasin (15, 30, 60 mg) were administered orally at 60-min intervals until the therapeutic doses were reached. All drugs were tolerated in controlled challenge tests.

PPIs are widely used for the treatment of acid related disorders. This group of drugs is the most potent inhibitors

of gastric acid secretion. Several PPIs – lansoprazole, rabeprazole, pantoprazole, and esomeprazole – have been developed after omeprazole, which is the first member of this group. Although rare, anaphylactic reactions to PPIs have been described.^{1–7}

They have modified benzimidazoles with a pyridine ring and chemically related structures. A number of case reports suggesting cross-reactivity patterns among lansoprazole and rabeprazole,^{2,3} omeprazole and lansoprazole,^{4–6} and omeprazole and pantoprazole^{1,4} have been reported. Our patient had IgE-mediated anaphylactic or urticarial reactions to lansoprazole, which were confirmed by her history and positive SPT results. However, SPT and IDT were negative for other PPIs including, omeprazole, pantoprazole, esomeprazole and rabeprazole. In addition, the oral challenge test showed that our patient tolerated therapeutic doses of omeprazole, pantoprazole, esomeprazole and rabeprazole. Vovolis reported IgE mediated allergic reaction to rabeprazole with good tolerance to omeprazole and lansoprazole.⁷ To the best of our knowledge, our patient is the first reported case of anaphylaxis induced by lansoprazole with good tolerance to other PPIs including rabeprazole.

In conclusion, cross-reactivity between PPIs is conflicting. We also showed that controlled oral challenge test using PPIs for which the SPT is negative is a safe approach to choose an alternative drug.

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