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Amoxicillin/clavulanic acid-induced anaphylaxis during anesthesia

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Sir,

We highlight the significance of the timing of the administration of antibiotics perioperatively. As per the WHO guidelines, the ideal time of administration of antibiotics is 30 minutes to 1 hour before the surgery. Antibiotic prophylaxis has limited beneficial effect if given after induction of anesthesia.

A 50kg, ASA grade I, 55-year-old woman with no evident history of allergies was scheduled for exploration of appendicular mass under general anesthesia. Patient was administered midazolam 2 mg, ondansetron 6 mg and fentanyl 100 mcg intravenous (IV) as premedication. Anesthesia was induced with Propofol 100 mg IV. Trachea was intubated with a cuffed endotracheal tube 7.5 mm ID, after neuromuscular blockade with rocuronium bromide 40 mg IV. Ten minutes after tracheal intubation, a dose of the prophylactic antibiotic, amoxicillin/clavulanic acid (1 gm/200mg) 1.2 g, was administered I.V over 5 minutes. Within five minutes, peak airway pressure increased from 18 to 35 cmH₂O, and oxygen saturation fell from 100% to 65%. The blood pressure decreased to 60/36 mmHg and heart rate increased to 126/minute (with a regular rhythm). On auscultation, rhonchi were heard bilaterally over the lung fields.

An anaphylactic reaction was suspected and the patient was immediately placed in Trendelenburg position. 500ml of normal saline was rapidly infused and 100% oxygen administered. Adrenaline 100 mcg, hydrocortisone 100 mg, phenaramine maleate 45.5 mg and ranitidine 50 mg were administered IV. Nebulization with levosalbutamol and ipratropium bromide was done, through an attachment to the endotracheal tube connector.

The patient responded to the treatment over 20 minutes. Rest of the surgery was uneventful. After tracheal extubation, the patient was shifted to the ICU for monitoring. After discharge from the hospital, allergy patch tests of propofol, fentanyl, rocuronium, ondansetron, midazolam and amoxicillin-clavulanic acid were done, which confirmed that the amoxicillin-clavulanic acid combination was the allergen responsible for the anaphylaxis in our patient.

Perioperative anaphylaxis manifests as cutaneous eruptions, hypotension, cardiovascular collapse, bronchospasm and death.^[1,2] Acute anaphylaxis following administration of Amoxicillin-Clavulanic acid is rare.^[3,4] We often forget to administer the prophylactic antibiotic at the most optimal time with respect to its efficacy, that is half an hour before the induction of anesthesia and give it in the immediate post-induction period.

In order to reduce the incidence of anaphylaxis, GOLRIA (Global Resources in Allergy) recommends that antibiotics should be administered IV in the pre-operative room and the patient should be monitored for

20 - 30 minutes before the induction of anesthesia, to recognize any anaphylaxis.[5] Erroneous diagnosis of allergic reaction can lead to increased patch testing to various drugs and increase the financial burden on hospital and patient.

We highlight the importance of administration of the antibiotics and non-anesthetic agents, 30 minutes before the induction of anesthesia rather than along with anesthetic agents. Strict adherence to this protocol will help avoid morbidity.

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