

Mephentermine triggered anaphylaxis in the peri-operative period: An unusual occurrence

Sir,

Anaesthesiologist uses many drugs in a short time period. Mephentermine is one such drug. This sympathomimetic drug is frequently used to treat hypotension occurring due to peripheral vasodilatation by anaesthetic drugs, blood loss and many other conditions. There is no recommendation to do skin-test for hypersensitivity of mephentermine. We are reporting an unusual occurrence of severe systemic allergic reaction to mephentermine. For best of our knowledge, this kind of reaction to intravenous (IV) mephentermine has never been reported before. Patient has given written informed consent for writing this case.

A 32-year-old man of American society of anaesthesiology physical status class I with normal airway and spinal anatomy, a case of primary infertility posted for trans-urethral resection of ejaculatory duct posted in urology theatre. After attaching basic monitors, sub-arachnoid block with bupivacaine heavy 0.5% 2.5 ml with 25 mcg fentanyl was given at the level of L3-L4 in lateral position. Spinal level achieved upto T4. Episode of hypotension (mean arterial BP <50 mm Hg) occurred with heart rate 55-65/min. So, normal saline and IV 6 mg mephentermine were administered. Within a minute the patient complained of itching in left hand and rashes developed in his upper-limb and chest followed by breathlessness, tachycardia and more hypotension. On auscultation, bronchospasm was present. We administered IV hydrocortisone, promethazine, ranitidine bolus immediately and salbutamol nebulisation started. He was

intubated and oxygenated with 100% oxygen. End-tidal carbon-dioxide was in higher side with obstructive pattern noted in monitor. IV adrenaline 200 mcg bolus followed by 1 mcg/kg/min infusion was started. He was shifted to intensive care unit. Serum tryptase (mast cell) and IgE were found to be positive. He was managed conservatively. Inotropic and vasopressor support was tapered off. On subsequent days he was doing well and discharged from hospital safely.

Peri-operative anaphylaxis was previously reported with antibiotics, contrast media, muscle relaxant, latex, colloids, IV inducing agents, opioids, aprotinine, local anesthetics, protamine etc.^[1] In this case discussed above, the preparation of mephentermine used is with preservative, methyl-paraben (0.08% v/v) and propyl-paraben (0.02% v/v) named TERMIN (Neon Laboratories LTD, Mumbai, India). It's thought that para-aminobenzoic acid, a metabolite of ester local anesthetics or methylparaben is the main causative agent to cause anaphylaxis. In this case, it is postulated that the preservatives methyl-paraben and propyl-paraben are the causative agents for the anaphylaxis. It was type-1 hypersensitivity reaction with clinical classification of class III.^[2] After first exposure of antigens in the body the IgE secreted from lymphocytes (class switching by interleukin 4) are attached with the cell surface of mast cells of tissue and basophils in blood. After second exposure of same antigens, there is cross-linking between the IgE of number of mast cells through bridging antigens causing cascade of release of inflammatory mediators.^[3,4]

Anaphylaxis can be manifested in first time due to exposure of a drug as molecular composition in this drug cross react with daily used toothpaste, soap, cosmetics, food etc.^[5] Our unusual occurrence may alert the anaesthesiologist using mephentermine in peri-operative period and remind the utility of resuscitation drugs preparation before proceeds of any kind of anesthesia.

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REFERENCES

1. Laxenaire MC, Mertes PM, Grouped'Etudes des Réactions Anaphylactoïdes Peranesthésiques. Anaphylaxis during anaesthesia. Results of a two-year survey in France. *Br J Anaesth* 2001;87:549-58.
2. Kroigaard M, Garvey LH, Gillberg L, Johansson SG, Mosbech H, Florvaag E, *et al.* Scandinavian clinical practice guidelines on the diagnosis, management and follow-up of anaphylaxis during anaesthesia. *Acta Anaesthesiol Scand* 2007;51:655-70.
3. Adkinson F, Pongracic J. Drug allergy. In: Holgate ST, Church MK, Lichtenstein LM, editors. *Allergy*. 2nd ed. London: Mosby; 2001. p. 155-62.
4. Koppert W, Blunk JA, Petersen LJ, Skov P, Rentsch K, Schmelz M. Different patterns of mast cell activation by muscle relaxants in human skin. *Anesthesiology* 2001;95:659-67.
5. Baldo BA, Fisher MM. Substituted ammonium ions as allergenic determinants in drug allergy. *Nature* 1983;306:262-4.

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