

MANAGEMENT OF CRISES DURING ANESTHESIA AND SURGERY. PART XIV: ALLERGY & ANAPHYLAXIS

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Although serious allergic reactions to drugs and materials used in anesthesia and surgery are rare but it could be life threatening. Anesthesiology personnel should be trained for immediate recognition and successful management of this situation. Careful history taking in atopic patients is vital. Investigations should be done later to find out the causative agent to avoid or treat such condition.

Causes: Agents concerned in anaphylactic reactions during anesthesia^{1,2}:

*Neuromuscular blocking agents: mainly Succinylcholine, Rocuronium, Atracurium, Vecuronium, Pancuronium, Mivacurium, and Cisatracurium.

*Antibiotics: Including; Penicillin, Cephalosporin, Quinolone, Vancomycin, and Rifamycin.

*Hypnotics: Propofol, Thiopental and Midazolam

*Opioids : Fentanyl, Sufentanil, and Morphine

*Blood products transfusion

*Colloids : Gelatin and Hetastarch plasma volume expanders

*Latex (natural rubber)

*Other agents such as: Bupivacaine, Protamine, Hyaluronidase and Methylene blue

Signs: signs are graded according to the severity of allergic reaction³:

Grade 1	Grade 2	Grade 3	Grade 4
Cutaneous <ul style="list-style-type: none"> • Erythema • Urticaria • Angioedema face and lips 	Grade 1 signs plus: Cardiovascular <ul style="list-style-type: none"> • Hypotension • Tachycardia Respiratory <ul style="list-style-type: none"> • Wheezing. • Pulmonary edema 	Grade 2 signs plus: Cardiovascular <ul style="list-style-type: none"> • Cardiovascular collapse • Profound hypotension • Bradycardia • Dysrhythmia Respiratory <ul style="list-style-type: none"> • Bronchospasm; • Hypoxia (SaO₂ < 92%) Neurologic <ul style="list-style-type: none"> • Unconscious in recovery 	Cardiovascular <ul style="list-style-type: none"> • Pulseless electrical activity • Cardiac arrest

Management^{4,5}:

Primary treatment

- Stop administration of substance

- Call for help, inform surgeon

- Trendelenberg position

- Airway management – oxygen

- Adrenalin: Give adrenaline bolus IV 0.001 mg/kg (adult dose 1 ml of 1:10,000). Start adrenaline infusion 0.00015 mg/kg/min (adult dose 1 ml/min of 1 mg in 100 ml) and increase as necessary. Titrate against heart rate and blood pressure.

- Fluid Therapy: Crystalloid 10-20 ml/kg.

Secondary treatment

- Antihistamine: H1 antagonists: promethazine 0.3 -1 mg/kg
H2 antagonists: ranitidine 0.5-1 mg/kg

- Corticosteroids: Hydrocortisone up to 5 mg/kg

- B2 agonists nebulisation: Salbutamol 5-10 µg

References

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