

## ***Allergic and Other Adverse Reactions to Drugs Used in Anesthesia and Surgery***

**The list of drugs patients may be exposed to during the perioperative and postoperative periods is potentially extensive. It includes:**

- Induction agents (propofol, midazolam, ketamine, and possibly thiopental)
- Neuromuscular blocking drugs (NMBDs)
- Opioids
- Antibiotics
- Sugammadex
- Colloids
- Local anesthetics
- Polypeptides
- Antifibrinolytic agents
- Heparin and related anticoagulants
- Blue dyes
- Chlorhexidine
- A range of other agents depending on several factors related to individual patients' clinical condition and progress in the postoperative recovery period

**Neuromuscular blocking drugs are overwhelmingly the most common cause of type I immediate reactions during anesthesia (succinylcholine and rocuronium). Followed by latex and antibiotics (PCN and cephalosporins).**

**CRNAs need to be constantly aware of the possibility of adverse drug reactions that may affect patient recovery and management due to the potentially vast amounts of drugs taken as prescribed at home, given during surgery, and medications given as need after surgery.**

Symptoms of anaphylaxis and anaphylactoid responses are often similar, making it difficult to distinguish the two based on symptoms alone although anaphylactic reactions tend to be more severe. On a graded scale, most anaphylactic reactions are classified as grade 2 or 3 (and sometimes 4) depending on presence of cutaneous symptoms.

- Mild reactions are grade 1
- Moderate reactions grades 2–3
- Severe reactions grade 3–4

Cardiovascular collapse, the sole feature in about 60% of cases, is due to vasodilation and pooling of peripheral blood which reduces venous return and cardiac output. It is the most common, and usually the worst, life-threatening feature.

Other symptoms include:

- Bronchospasm
- Angioedema/laryngeal edema
- Abdominal pain, vomiting, diarrhea, and hematemesis
- Cutaneous symptoms are more often seen in anaphylactoid (non-IgE-mediated) reactions.
- **Minor features**- rash, flushing, rhinitis, cough, lacrimation, conjunctivitis, urticaria, pruritus, aura
- **Late features**- headache, edema, thrombotic events, wound hematoma, vaginal discharge