

Vaccine-associated Anaphylaxis

Summary for physicians: "COVID-19 vaccine-associated anaphylaxis: Statement of the WAO Anaphylaxis Committee" (Turner P et al, World Allergy Organ J, 2021)

A resource of the WAO COVID-19 Task Force and WAO Anaphylaxis Committee

Anaphylaxis is a serious systemic hypersensitivity (allergic) reaction that is usually rapid in onset and may cause death. Severe anaphylaxis is characterized by potentially life-threatening compromise in airway, breathing and/or circulation, and may occur without typical skin features or circulatory shock being present.

Vaccines against COVID-19 are an essential global intervention to control the current pandemic situation

Majority of adverse reactions are not allergic, but anaphylactic reactions can happen 1:125,000 doses

High molecular weight PEG may be responsible for even IgE or complement mediated anaphylactic reactions

Anaphylactic reactions occur in the first 15-30 min and respond well to epinephrine early administration

Most allergic patients can be vaccinated as normal with an observation period 15-30 min

History of anaphylaxis (idiopathic, or multiple different drugs, or other vaccines, or monoclonal) must be referred for allergy evaluation

Vaccination is contraindicated in patients with prior allergic reactions to mRNA vaccines or related components (PEG)



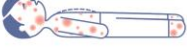







- 1 Have a written emergency protocol for recognition and treatment of anaphylaxis and rehearse it regularly. 
 - 2 Remove exposure to the trigger if possible, e.g. discontinue an intravenous diagnostic or therapeutic agent that seems to be triggering symptoms. 
 - 3 Assess the patient: Airway / Breathing / Circulation, mental status, skin and body weight (mass). 
 - 4 Call for help: resuscitation team (hospital) or emergency medical services (community) if available. 
 - 5 Inject epinephrine (adrenaline) intramuscularly in the mid-anterolateral aspect of the thigh, 0.01 mg/kg of a 1:1,000 (1 mg/ml) solution, maximum of 0.5 mg (adult) or 0.3 mg (child); record the time of the dose and repeat every 5-15 minutes, if needed. Most patients respond to 1 or 2 doses. 
 - 6 Place patient on the back or in a position of comfort if there is respiratory distress and/or vomiting; elevate the lower extremities; fatality can occur within seconds if patient stands or sits suddenly. 
 - 7 When indicated, give high-flow supplemental oxygen (6-8 L/minute), by face mask or oropharyngeal airway. 
 - 8 Establish intravenous access using needles or catheters with wide-bore cannula (14-16 gauge). Consider giving 1-2 liters of 0.9% (isotonic) saline rapidly (e.g. 5-10 ml/kg in the first 5-10 minutes to an adult; 10 ml/kg to a child). 
 - 9 If indicated at any time, perform cardiopulmonary resuscitation with continuous chest compressions. 
 - 10 At frequent, regular intervals, monitor patient's blood pressure, cardiac rate and function, respiratory status, and oxygenation (monitor continuously, if possible). 
- Promptly and simultaneously, perform steps 4, 5 and 6
- In addition

Fig. 5 in: Cardona V, et al. World Allergy Organization Anaphylaxis Guidance 2020. World Allergy Organ J. 2020;13(10):100472.

Recommended doses for INTRAMUSCULAR epinephrine (adrenaline)

**0.01 mg/kg of body weight, to a maximum total dose of 0.5 mg
This is equivalent to 0.5ml of 1mg/ml (1:1000)* epinephrine (adrenaline) OR**

Infants under 10kg	0.01 mg/kg = 0.01 ml/kg of 1 mg/ml
Children aged 1 – 5 years	0.15 mg = 0.15 ml of 1 mg/ml
Children aged 6 – 12 years	0.3 mg = 0.3 ml of 1 mg/ml
Teenagers and adults	0.5 mg = 0.5 ml of 1 mg/ml