Management of Anaphylaxis Following Immunization in the Community

March 30, 2021

Introduction

This document is intended as a resource for immunizers in a community setting (e.g. schools, public health clinics, pharmacies). It is to be used in addition to—and does not replace—immunization policy or other directives provided by the immunization site. This document applies to management of anaphylaxis following all vaccines with specific information related to COVID-19 vaccine where indicated.

Anaphylaxis is a rare but potentially life-threatening allergic reaction to foreign antigens that is treatable with rapid and appropriate management. It has been shown to be causally associated with vaccines with a frequency of approximately 1.3 episodes per million doses of vaccine administered.\(^1\) Although most vaccine providers will never see a case of anaphylaxis, they should know the signs and symptoms of anaphylaxis and be prepared to act quickly.

COVID-19 vaccine and anaphylaxis

Anaphylaxis following COVID-19 vaccines is being closely monitored. Post-marketing surveillance of COVID-19 vaccines\(^2\) has described reports of anaphylaxis; however, the frequency remains rare.\(^3\) Information on COVID-19 vaccine safety and reports of adverse events following COVID-19 vaccines in Ontario can be found at: [https://www.publichealthontario.ca/en/diseases-and-conditions/infectious-diseases/respiratory-diseases/novel-coronavirus/vaccines](https://www.publichealthontario.ca/en/diseases-and-conditions/infectious-diseases/respiratory-diseases/novel-coronavirus/vaccines)

Management of Anaphylaxis Following Immunization

Epinephrine is the first-line treatment recommended for management of anaphylaxis:

- It is the only medication that reduces hospitalization and death and should be administered as soon as anaphylaxis is recognized to prevent the progression to life-threatening symptoms.\(^1\)

- There is no absolute contraindication to epinephrine (adrenaline) for the treatment of anaphylaxis.\(^1\) Failure to administer epinephrine promptly may result in greater risk to the client with anaphylaxis than using epinephrine improperly.

- Epinephrine should always be provided intramuscularly (IM) in the mid-anterolateral aspect of the thigh (vastus lateralis) because of its large blood supply. The deltoid muscle is not as effective in absorbing epinephrine.
• Epinephrine prevents and relieves upper airway swelling, hypotension, and shock.

**Antihistamines are no longer indicated as adjunctive treatment in the management of anaphylaxis in a community setting.**

- Antihistamines, such as diphenhydramine (Benadryl®), are not indicated in the initial treatment in the emergency management of anaphylaxis because they have no effect on respiratory or cardiovascular symptoms, and as such, have little clinical importance in the management life-threatening anaphylaxis.

- Administration of antihistamines may delay prompt intramuscular injection of epinephrine.

- Diphenhydramine is no longer a recommended item to keep in an anaphylaxis management kit for immunizers.

**Pre-vaccination screening**

Prevention of anaphylaxis is critically important and includes pre-vaccination screening to identify a history of anaphylaxis and possible allergy to any component of the vaccine or its container. For more information related to pre-screening for COVID-19 vaccine, please see the Ontario Ministry of Health’s COVID-19 Vaccine Pre-screening Assessment Tool for Health Care Providers.

**Post-vaccination observation**

Most occurrences of anaphylaxis to a vaccine begin within 30 minutes after administration. Therefore, vaccine recipients are instructed to wait at least 15 minutes after receiving vaccine before leaving the immunization clinic. Longer waiting times of up to 30 minutes may be recommended for some individuals with a history of allergic reactions and/or anaphylaxis. Further information regarding post-vaccination observation following receipt of COVID-19 vaccine, can be found in the Ontario Ministry of Health’s COVID-19 Vaccination Recommendations for Special Populations document.

**Recognizing anaphylaxis**

Clinical features of anaphylaxis include sudden onset, rapid progression over several minutes, and involvement of two or more body systems. While specific signs and symptoms are highly variable, the most frequently involved systems are skin (80-90% of anaphylaxis cases), respiratory (up to 70% of cases), and cardiovascular and gastrointestinal (each up to 45% of cases). Up to 15% of cases may also exhibit central nervous system changes such as, uneasiness, altered mental status, dizziness, or confusion.

It is important to distinguish anaphylaxis from anxiety-related reactions including fainting (vasovagal syncope), hyperventilation, and breath-holding as quickly as possible to prevent delay of appropriate treatment (i.e. epinephrine).
### Key distinguishing features of anaphylaxis and vasovagal syncope

<table>
<thead>
<tr>
<th>Clinical features</th>
<th>Anaphylaxis</th>
<th>Vasovagal syncope</th>
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</thead>
<tbody>
<tr>
<td>Onset from time of immunization</td>
<td>Within minutes up to 4 hours after injection; most within 2 hours</td>
<td>During or within minutes of injection</td>
</tr>
<tr>
<td>Skin</td>
<td>Urticaria, angioedema, pruritus, erythema</td>
<td>Generalized pallor, cold clammy skin</td>
</tr>
<tr>
<td>Respiratory</td>
<td>Cough, wheeze, stridor, respiratory distress, rhinorrhea, sneezing</td>
<td>Normal respiration – may be shallow but not laboured</td>
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<tr>
<td>Cardiac</td>
<td>Tachycardia</td>
<td>Bradycardia</td>
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<tr>
<td>Neurologic</td>
<td>Sense of severe anxiety and distress; loss of consciousness – no improvement once supine or in head down position</td>
<td>Sense of light-headedness; loss of consciousness – improves once supine or in head down position; may be transient jerking of the limbs and eye-rolling</td>
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References


Citation

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