Considerations for At-Home Management of Food-Induced Anaphylaxis

Guidance for Allergists/Immunologists from the CSACI

Current as of August 14, 2023 and based on available evidence to date

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Home management of food-induced anaphylaxis with epinephrine use but without emergency medical services (EMS) activation may be appropriate in certain circumstances. Guidance from the United States in conjunction with Food Allergy Research and Education (FARE) during the COVID-19 pandemic first proposed this approach to reduce healthcare burden and decrease the risk of infection as a result of the pandemic.[1] As we move past the COVID-19 pandemic, however, this guidance can still apply. A recent perspective article in Annals of Allergy, Asthma and Immunology advocated retiring routine EMS activation.[2]

Historically, transfer to a healthcare facility for anaphylaxis management and observation has long been a part of international anaphylaxis guidance. This recommendation has been in place to allow for additional intervention if subsequent management of anaphylaxis is needed both for the acute event and in the event of a biphasic reaction, which has been historically estimated to occur in 5- 20% of patients. However, the risk of severe or clinically significant biphasic reaction is likely much lower than that.[3,4] The Canadian Pediatric Society (CPS) currently recommends a period of observation of at least 4-6 hours in the Emergency Department (ED) following the onset of allergic symptoms to assess the need for further resuscitative measures for persistent or refractory reactions and to monitor for a biphasic reaction.[3] Similarly, Translating Emergency

Knowledge for Kids (TREKK) currently recommends monitoring for 2-6 hours or overnight based on reaction severity and individual risk factors.[5]

Rationale for implementing updated guidance for home management of anaphylaxis with epinephrine use but without EMS activation in certain circumstances includes:

1. The mandatory requirement to activate EMS may lead to an association of the use of epinephrine with EMS activation, and so result in non-use or delayed use of intramuscular epinephrine[6,7]
2. Fatality in anaphylaxis is an exceptionally rare outcome, with an overall prevalence of 0.47-0.69 per million persons an stable case fatality rates at 0.1% of all ED visits.[8,9]
3. Severe biphasic anaphylaxis is less common than previously reported, and biphasicanaphylaxis fatality is exceptionally rare (0.5 to 1 death per million person- years)[1,10,11]
4. Biphasic anaphylaxis and other severe anaphylaxis outcomes (including admission to the intensive care unit/hospital ward) are most effectively prevented by early epinephrine administration[12]
5. The high safety profile of intramuscular epinephrine does not require any ED monitoring and can be safely managed at home[13]
6. Adjunct therapies provided in the ED such as antihistamines and steroids have not been demonstrated to reduce the risk of a biphasic reaction nor of fatality[4,14]
7. Routine activation of EMS for resolved anaphylaxis after epinephrine therapy is a low value practice an associated with a significant healthcare cost ($142 million US dollars per life-year saved and $1.4 billion US dollars to prevent one death)[15]
8. There remains significant healthcare utilization issues in the EDs as well as increased risk of infection transmission, not just from COVID-19 but from other respiratory viruses as well.[16–19]

In considering this guidance, at-home management of anaphylaxis could apply under a stringent set of circumstances in a shared decision-making approach between patient and clinician that include the following factors:

1. Patient/caregiver comfort level with the recognition and management of anaphylaxis, in particular the prompt and correct use of epinephrine auto-injector
2. Immediate access to at least two, in date, weight-appropriate dose of epinephrine autoinjectors
3. Absence of risk factors for a biphasic reaction: a prior biphasic reaction, a moderate-to- severe reaction, delayed use of epinephrine (>60 minutes) or requirement of more than one dose of epinephrine[4,14,20]
4. Absence of risk factors for severe anaphylaxis outcomes: cardiovascular disease, asthma (especially active or poorly controlled), mastocytosis[1,4,11,21]
5. Symptom resolution with one dose of epinephrine administration
6. Patient/caregiver preference

In all other circumstances EMS should continue to be activated.

There is global evidence that prompt epinephrine use in cases of anaphylaxis remains suboptimal.[22] Early administration of epinephrine is the only life-saving intervention available for anaphylaxis and is effective if administered promptly and correctly.[23] Regardless of EMS activation, the focus of anaphylaxis management should be prompt and correct epinephrine administration. Therefore, home management of anaphylaxis with epinephrine use but without EMS activation is appropriate in the stringent set of circumstances outlined above.

Acknowledgements: The authors would like the acknowledge the CSACI board members L Connors, M Hanna, K Hildebrand, V Kim, S Lohrenz, A O'Keefe, L Rosenfield and H Vliagoftis for their assistance.

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