Case Report

2 Handfuls of Medication in 2 Hours Just to Let Him Talk

Kamaluddin A[1], Fauzi MH[2], Hussein SAS[3], Hussein HM[4] , Mohamed FL[5], Bakar NA[6]

Abstract:
Repeated dose of adrenaline in anaphylaxis is limited evidence in clinical setting. Hence, the usage is depending on physician best interest and knowledge. We reported a case of repeated doses of adrenalin was given through nebulizer and intravenous in anaphylaxis. We believed the unusual circumstances of this case was likely to be repeated on some readers' clinical practice and this mode of treatment is an adjunct to consider in such cases especially in Emergency Department (ED).

Keywords: Anaphylaxis, Repeated Adrenaline, Emergency Department (ED)

DOI: http://dx.doi.org/10.3329/bjms.v13i2.16100
Bangladesh Journal of Medical Science Vol.13(2) 2014 p.209-211

Introduction:

In anaphylaxis, emphasis on parenteral role of adrenaline is undisputed[1]. Although these reactions can spontaneously resolve with endogenous compensatory responses, failure to use adrenaline has been considered a major factor contributing to lethal outcomes. Human data on the efficacy and safety of adrenaline treatments for anaphylaxis are limited[2]. There have also been recurrent debates on the indications, route and dose of administration of adrenaline especially in elderly.

Case report:

A 71-year-old male presented with sudden onset of tongue swelling. Upon arrival in Emergency Department (ED), the tongue swelling had progressed to a point that he was unable to talk (Figure 1). Patient's tongue was swollen, protruded out with limited mouth opening, able to phonate sound but not words. With combination of nebulized (18 mg) and intravenous adrenaline (2 mg), patient's symptoms improved dramatically. Adrenaline was given in sequential doses to avoid complication. Tongue swelling receded and he was able to talk in sentences (Figure 2). Patient claimed he was bitten by something (insect) over the upper back area prior to developing these symptoms. Patient was admitted and discharged well.

1. Azlan Kamaluddin, Department of Emergency and Trauma, Hospital Sultanah Bahiyah, KM 6 Jalan Langgar, 05460 Alor Setar, Kedah.
2. Mohd Hashairi Fauzi, Department of Emergency Medicine, School of Medical Sciences, USM, 16150 Kubang Kerian, Kelantan, Malaysia
3. SA Syed Hussein, Department of Emergency and Trauma, Hospital Sultanah Bahiyah, KM 6 Jalan Langgar, 05460 Alor Setar, Kedah.
4. Hardawani Mohd Hussein, Department of Emergency and Trauma, Hospital Sultan Abdul Halim, Jalan Lencungan Timur, Bandar Aman Jaya, 08000 Sungai Petani, Kedah.
5. Fatahul Laham Mohamed, Department of Emergency and Trauma, Hospital Sultanah Bahiyah, KM 6 Jalan Langgar, 05460 Alor Setar, Kedah.
6. Norzuraini Abu Bakar, Department of Emergency and Trauma, Hospital Sultanah Bahiyah, KM 6 Jalan Langgar, 05460 Alor Setar, Kedah.

Corresponds to: Mohd Hashairi Fauzi Department of Emergency Medicine, School of Medical Sciences, USM, 16150 Kubang Kerian, Kelantan, Malaysia, E-mail: hashairi@kk.usm.my

Figure 1

Figure 2

Discussion:

Anaphylaxis is a severe allergic reaction that requires prompt recognition and treatment. It is rapid in onset and may cause death. Trigger factors include foods, insect venoms, medications, including those used peri-operatively, natural rubber latex and exercise[3-4].The clinical signs can be subtle, but an acute onset of skin or mucosal edema with respiratory compromise or reduced blood pressure should alert the physician to the diagnosis. Most of the fatal cases were due to upper and lower airway obstruction. The swollen tongue was a warning sign for the upper airway problem that might be associated with laryngeal edema. Any delay in treatment is associated with increased the mortality rate[5].The management revolves around the use of adrenaline after an initial airway, breathing and circulation approach, in a dose of 0.5 mg 1:1,000 intramuscularly, repeated five minutes later if there has been no response. Steroids and antihistamines are often given, although there is no convincing evidence of their effect in the acute setting[6].

Studies looking at the use of repeated doses of epinephrine in patients experiencing anaphylaxis are limited. Few studies recommended the use of repeated dose adrenaline in food-induced anaphylaxis[8-9]. A population-based study with medical record review in United State found that patients presented with wheezing, cyanosis, arrhythmias, hypotension and shock, stridor, laryngeal edema, cough, nausea, and emesis were likely to receive repeated epinephrine doses[7]. A history of asthma did not predict use of repeated doses of epinephrine.

Most of the guidelines suggest the route of administration for adrenaline is intramuscular (IM) as the first line therapy. If patient required repeated doses, titrated intravenous (IV) adrenaline is recommended. Even though, nebulised adrenaline has lack of evidence in anaphylaxis but some authors suggest as a useful adjunct if upper airway obstruction is present especially in children[10]. In this case report, we support the recommendation of repeated dose of adrenaline via nebulizer because it's proven to reduce swollen tongue in upper airway obstruction due to anaphylaxis. Further study is needed to confirm these results and to expand them to patients who do not present to the ED.

Conclusion:

In conclusion, intermittent use of intravenous adrenaline together with nebulized adrenaline in management of upper airway obstruction in anaphylaxis was under reported. With proper monitoring, it significantly reduces the severity of anaphylaxis and the need for surgical airway.

References:

1. Alrasbi M, Sheikh A. Comparison of international guidelines for the emergency medical management of anaphylaxis. *Allergy* 2007;**62**:838–841. http://dx.doi.org/10.1111/j.1398-9995.2007.01434.x

2. Sheikh, A; Shehata, Y.A; Brown, S.G.A; Simons, F.E.R. Adrenaline for the treatment of anaphylaxis: Cochrane systematic review. *J. Allergy* 2009; **64**:204-212.

3. Brown AF, McKinnon D, Chu K. Emergency department anaphylaxis: a review of 142 patients in a single year. *J Allergy Clin Immunol* 2001;**108**:861–866. http://dx.doi.org/10.1067/mai.2001.119028

4. Simons FER, Frew AJ, Ansotegui IJ, Bochner BS, Finkelman F, Golden DBK et al. Risk assessment in anaphylaxis: current and future approaches. *J Allergy Clin Immunol* 2007;**120**(Suppl.):2–24. http://dx.doi.org/10.1016/j.jaci.2007.05.001

5. Bock SA, Munoz-Furlong A, Sampson HA. Further fatalities caused by anaphylactic reactions to food, 2001–2006. *J Allergy Clin Immunol* 2007;**119**: 1016–1018.http://dx.doi.org/10.1016/j.jaci.2006.12.622

6. Whiteside, M. and A. Fletcher, Anaphylactic shock: no time to think. *J R Coll Physicians Edinb*. **40**(2): p. 145-7; quiz 148. http://dx.doi.org/10.4997/JRCPE.2010.210

7. Manivannan, V., et al., Factors associated with repeated use of epinephrine for the treatment of anaphylaxis. *Ann Allergy Asthma Immunol*, 2009. **103**(5): p. 395-400. http://dx.doi.org/10.1016/S1081-1206(10)60358-4

8. Jarvinen, K.M., et al., Use of multiple doses of epinephrine in food-induced anaphylaxis in children. *J Allergy Clin Immunol*, 2008. **122**(1): p. 133-8. http://dx.doi.org/10.1016/j.jaci.2008.04.031

9. Oren, E., et al., Food-induced anaphylaxis and repeated epinephrine treatments. *Ann Allergy Asthma Immunol*, 2007. **99**(5): p. 429-32. http://dx.doi.org/10.1016/S1081-1206(10)60568-6

10. Clinical Practice Guideline,2011. Royal Children's Melbourne Hospital http://www.rch.org.au/clinicalguide/guideline_index/Anaphylaxis/