Epinephrine auto-injectors for acute asthma as well as anaphylaxis

Would the three children described by Mark Levy et al. and many others who died have survived if they’d had multiple epinephrine (adrenaline) intramuscular (IM) injections? Former President Obama legislated in 2013 for epinephrine auto-injectors in educational establishments for acute asthma attacks, as well as anaphylaxis,² with a Good Samaritan clause. The National Review of Asthma Deaths recommended auto-injectors for asthmatics who survived a first life-threatening attack. In the thunderstorm epidemic in Victoria, Australia, in November 2016, paramedics gave IM epinephrine repeatedly to enable patients to survive until hospital arrival. UK paramedics will also give IM epinephrine to life-threatening patients with asthma.³

Available auto-injectors are EpiPen®, Jext® (same manufacturer), and Emerade®; the former have doses and needle lengths of 0.15 mg (13 mm) and 0.3 mg (16 mm). After firing EpiPen, 1.85 mg [ml] and 1.7 mg [ml] remain in the internal syringe. A YouTube EpiPen wilderness medicine technique demonstrates obtaining additional doses. Emerade has 0.15 (16 mm), 0.3, and 0.5 mg (23 mm), the largest dose and length; no drug remains after firing. Natasha Ednan-Laperouse, who died after eating a baguette containing an allergen, received two EpiPen Jr autoinjectors: past their prime? J Allergy Clin Immunol 2000; 105(5): 1025–1030.

In my role as a consultant in public health medicine with a focus on health intelligence, I am often asked for more evidence, fewer anecdotes, and more cooperation with primary care clinicians quote what they observed or heard, and to avoid anecdotally driven practice. Anecdotal evidence comprises a particular occurrence, whereas statistical evidence consists of an arithmetic summary of a series of instances. Causal evidence involves an explanation for the occurrence of an effect; finally, expert evidence comprises the opinion of one or more experts. Generally, anecdotal evidence is recognised as being based on personal experience, with anecdotes consisting of short stories or narratives that aim to make a point.

A 2005 review of the different evidence types found that anecdotal evidence is the least persuasive type of evidence.¹ However, despite the findings of this review and also not appearing in the hierarchy of evidence,² it has been argued that anecdotal evidence wields a disproportionally potent influence on clinical reasoning and behaviour.³

The words that we employ reflect our personal attitudes, and influence the mindsets of others. Pairing the word ‘anecdotal’ with the word ‘evidence’ implies that anecdote is a form of evidence when it is not, and also gives credence to any argument using it. For this reason, I would suggest that we detach the word ‘evidence’ from ‘anecdotal’ and replace it with the non-judgemental word ‘information’.⁴

I am not arguing that we should not use anecdotal information, only that we should use it in its non-evidential context. Anecdotes can assist with clinical teaching, as well as help to influence professional or public opinion by relaying information in appealing, familiar, and personalised ways.³

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