Anaphylaxis following trivalent influenza vaccine – A SAEFVIC Case Study

Department of Health Newsletter: Issue 59 October 2012

A 25-year-old intensive care nurse from Melbourne received an influenza vaccine at her workplace at the end of her shift. She was advised at the time of vaccination to remain in a nearby area for a minimum of 15 minutes for observation. Immediately after immunisation she left to go home. While driving, about 10 minutes following the vaccine administration, she developed symptoms of chest tightness and shortness of breath which progressed to a wheeze with swelling of lips and tongue. She was able to drive herself to the emergency department of a metropolitan hospital where she was treated for anaphylaxis and admitted overnight. She was discharged the next day fully recovered. Of note, she has a history of asthma requiring previous admissions to ICU and an allergy to morphine. She had also received the influenza vaccine for several years previously with no adverse events.

Discussion

This case highlights the importance of a person remaining under observation for at least 15 minutes following vaccination. It is also recommended that adults should be warned of the risk of driving, with a wait of at least 30 minutes after vaccination. The Surveillance of Adverse Events Following Vaccination in the Community (SAEFVIC) has previously reported the death of a vaccinee involved in a car accident driving home less than 30 minutes after immunisation.

Influenza vaccine was indicated for this patient as she is a healthcare professional and has a history of asthma and is therefore at risk of severe influenza-related complications. SAEFVIC has arranged follow-up in the vaccine safety clinic at the Royal Melbourne Hospital for further assessment.

SAEFVIC uses specialist teams at the Royal Children’s, Monash Medical Centre and the Royal Melbourne Hospital for children and adults who have significant allergic events following vaccinations.

Learning points

Anaphylaxis is a serious adverse event following immunisation (AEFI). It is usually of rapid onset, occurring within 15–30 minutes of administering a vaccine. It is a rare AEFI with rates described between zero to 3.5 per million\(^1\) cases for vaccines given to children and adolescents.

The United States Adverse Event (VAERS) reporting rate for verified anaphylaxis was 1.4 per million for the 2009-H1N1 vaccinations.\(^2\)

There are multiple systems involved with anaphylaxis, and the diagnosis is confirmed when there is a combination of signs as listed below.

- Skin - itchiness, erythema, urticaria, or angioedema
- Respiratory - cough, wheeze, stridor, or signs of respiratory distress
- Cardiovascular - tachycardia, weak/absent peripheral and carotid pulse, hypotension
- Gastrointestinal - nausea, vomiting
- Neurological - sense of severe anxiety and distress; loss of consciousness and no improvement once supine or head down position.

Since its commencement in 2007 SAEFVIC has received 30 reports of anaphylaxis from all vaccines, including 13 reports following a trivalent influenza vaccine. Whilst AEFIs are rare, all immunisation providers need to be aware of the signs of anaphylaxis and administer adrenaline (1:1000) at the appropriate dose (0.01 ml per kg of bodyweight to a maximum of 0.5ml) by deep IM injection. Anaphylaxis must be reported to the SAEFVIC service.

References and further reading
