What to do when your patient reacts badly - depot injection causing multiple anaphylactic reactions

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27 year old theatre nurse suffers 30 anaphylactic reactions following a depot injection, requiring 7 hospital admissions over 6 weeks.

Presentation

- 27 year old presented with facial sweling , lip tingling and urticarial rash 4 days post injection of *"Prostap SR"*- a gonadorelin (LHRH) analogue injection- to treat her endometriosis.
- Known penicillin allergy, but otherwise fit and well.
- On assessment, pulse 105, blood pressure 117/94 , no reaction at right arm injection site.
- Initially treated as an allergic reaction with intravenous hydrocortisone and chlorphenamine and discharged with an epipen.
- Readmitted within 24 hours with the same symptoms, additional wheeze, still tachycardic, but not hypotensive.
- Diagnosis of anaphylaxis made and treated acutely with adrenaline intramuscularly.

Anaphylaxis

Serious allergic reaction that is rapid in onset and may cause death. Often under-recognised, as initially in this case, and undertreated. A normal blood pressure should not reassure.

Treatment involves initial removal of the trigger- sadly not possible in this case. Early intramuscular administration of 0.5mg adrenaline aims to prevent the development of shock and to reduce fatalities[1].

Patient Perspective

- Mother of young child- husband away with the army- on one occasion collapsing while awaiting ambulance, in sole care of her child
- Sudden events with little warning
- Health professional being treated at her work place and keen to continue to work
- Myomectomy holding risk of significant disfigurement, without certain benefit

Pathophysiology

Prostap SR remains in a steady state from day 5 post injection to day 117. This explained the repeated anaphylactic reactions over weeks. Myomectomy was opted against as there was no area of local reaction to delineate borders, so a large excision would be required, without guarantee of clearance.

It was unclear whether the reaction was mast cell or bradykinin mediated, with C3, C4 and serum tryptase levels being normal throughout. Immumology advice was therefore to address all possible mediators, leading to use of the medications in box 1.

Discharge medication

Medication	Classification	Action
Cetirazine	H1 anti-histamine	Relief of itch and urticaria
Fexophenadine	H1 anti-histamine	
Cimetidine	H2 anti-histamine	
Prednisolone	Glucorticoid	Possible role in preventing the protracted reactions
Montelukast	Leukotriene receptor antagonist	Reduce bronchoconstriction and inflammation
Tranexamic acid	Anti-fibrinolytic	Reduces bradykinin via secondary prostaglandin pathway

Outcome

She suffered only two further reactions, from week 6 to 11, on her current cocktail of medications. One required home use of epipen, after a vomiting episode which may have affected tablet absorption and the second which was not as severe and did not progress to anaphylaxis or require the use of an epipen. She returned to work successfully.

Learning Points

- Normal Blood Pressure does not exclude anaphylaxis
- Patient recognition of the early signs of anaphylaxis and confidence in use of an adrenaline auto-injector (epipen) was essential to a good outcome
- Continuity of care by the acute medicine team over multiple admissions improved the patient experience
- Consistent pharmacist input to the acute medical team was of significant benefit

Reference

1. Resuscitation Council (UK), Emergency Treatment of Anaphylactic Reactions- Guidelines for Healthcare Providers, January 2008, www.resus.org.uk