STIR Bulletin Number 3

Management of suspected anaphylaxis due to blood products

*This document is intended for information only and does not replace local guidelines.*

### Anaphylaxis usually occur shortly after the start of the transfusion. The estimated incidence is 1:20,000 to 1:50,000 transfusions (any fresh product).

### Causes of anaphylaxis during a blood transfusion include a patient with IgA deficiency and IgA antibodies or a patient with antibodies to a plasma protein (haptoglobin, IgG, transferrin, C3, C4 or cytokines). Rare causes of anaphylaxis include donor consumption of an allergen (like nuts) to which the recipient is sensitised or transfusion of donor IgE antibodies to an allergen present in the recipient.

### Reports of allergic reactions to blood products represent approximately one third of all clinical reactions reported to STIR (reporting periods 2014-18). Of these reported reactions one third have a high severity score (SR1 or 2).

#### **Recognise Anaphylaxis:**

**Skin**: urticaria / rash / angioedema / hives **AND**

**Systemic:** shock / hypotension / respiratory distress / bronchospasm with wheeze or stridor / upper airway obstruction / abdominal pain / vomiting / diarrhoea. This can rapidly progress to loss of consciousness and death.

**Act:**

* **STOP** the transfusion and call for assistance.
* **Escalate care** - follow local anaphylaxis guidelines for example: [www.allergy.org.au](http://www.allergy.org.au)
* **Resuscitate** the patient as required (airway, breathing, circulation)

**Investigate:**

Exclude other causes of anaphylaxis and other transfusion reactions (perform clerical check and transfusion reaction investigations).

Request serum tryptase at these time-points:

1. As soon as urgent medical care is complete
2. 1 to 2 hours post start of reaction
3. A baseline 12 to 24 hours post reaction

Measure IgA, IgA antibodies and haptoglobin preferably from a pre-transfusion specimen especially if a large volume of plasma containing product has already been administered. Ascertain whether the patient has known allergies.

*Please note: IgA and haptoglobin deficiency are uncommon but well recognised causes of anaphylaxis to plasma containing products. Results will influence the management of future transfusion episodes.*

**Report:**

Document using local adverse transfusion reaction and/ or risk management process and report to the Serious Transfusion Incident Reporting (STIR) system, via Blood Matters. Medications and manufactured blood product implicated in anaphylaxis should be reported to the Commonwealth Therapeutic Goods Administration.

**Follow up:**

Refer to a haematologist and immunologist to plan for future transfusions.

Elective transfusions should be performed at centres with adequate resuscitation facilities. Medical personnel should be aware the patient has had previous anaphylaxis due to blood products. Consider washed red cells.

For patients with IgA deficiency and anti-IgA antibodies implicated in an anaphylactic episode, use IgA deficient donor products and/or washed red cells. Pre-planning surgical procedures where transfusion may be needed is essential.

**References:**

Adverse events: Australian Red Cross Blood Service - [www.transfusion.com.au](http://www.transfusion.com.au)

Acute management of anaphylaxis: Australasian Society of Clinical Immunology and Allergy - [www.allergy.org.au](http://www.allergy.org.au)

Guideline on the investigation and management of acute transfusion reactions - Prepared by the BCSH Blood Transfusion Task Force: *British Journal of Haematology. Volume 159, Issue 2; October 2012 Pages 143-153.* <https://onlinelibrary.wiley.com/doi/epdf/10.1111/bjh.12017> (accessed 10 August 2019)

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