










SHOT reports reveal that 40% of platelet reactions and 40% of allergic reactions are investigated inappropriately with serological tests. This SHOT bite aims to clarify which investigations are needed following a febrile, allergic or hypotensive reaction.

*The first step is to correctly classify the reaction as febrile, allergic or hypotensive (see shot bite no. 05a: FAHR – getting the diagnosis right)*

| Febrile   | Allergic   | Hypotensive  |
|---|--|--|
| Temperature rise and/or inflammatory symptoms such as rigors, nausea, myalgia, shortness of breath without wheeze | Flushing, urticaria/rash, angio-oedema, wheeze, stridor, hypotension (anaphylaxis) | Isolated fall in systolic blood pressure of 30mmHg or more AND systolic blood pressure of 80 mmHg or less within 1 hour of completing transfusion and no anaphylactic symptoms |

**When should serological investigations (repeat group & screen/ DAT/ crossmatch) be sent?**

Serological tests are only required for febrile or hypotensive type reactions involving red cells, where the reaction is severe enough to warrant stopping transfusion.

|             | Red cells   | Platelets   | Plasma products   |
|-------------|---|---|---|
| Febrile     |  |  |  |
| Allergic    |  |  |  |
| Hypotensive |  |  |  |

Where reactions warrant serological investigations, basic screening tests (full blood count, renal function, liver enzymes), coagulation screen and haemolysis screen (LDH, haptoglobin, urine for haemoglobin) should also be sent.

## *Other tests sent in certain circumstances*

### **Tryptase**

**When to send:** Suspected anaphylactic reactions where diagnosis is uncertain

**What to send:**

Serum sample x 3

- At onset of symptoms
- 1-2 hours (peak result)
- 24 hours (or longer) post reaction (to assess baseline)

**Interpretation:** Rise during reaction to peak  $> 14 \mu\text{g/L}$  with fall at baseline supports anaphylaxis

### **Immunoglobulin A (IgA) levels**

**When to send:** Severe allergic reactions or recurrent severe febrile reactions within the first 15 minutes. Looking for severe congenital IgA deficiency.

**What to send:** Serum sample (if immunoglobulins have not previously been tested)

**Interpretation:** If isolated severe deficiency (IgA  $< 0.07 \text{ g/l}$  and **not** hypogammaglobulinaemia), send a sample to blood service for confirmation and anti-IgA antibody testing

### **Patient blood cultures**

**When to send:** Severe febrile reactions which warrant stopping transfusion.

Might be considered in moderate febrile reactions, particularly if patient is immunocompromised.

