

FAHR Video Script

<u>Welcome</u>

Welcome to this SHOT video on febrile and allergic transfusion reactions. This will give you an overview of how to recognise, assess and manage these acute reactions, and how to look after your patient if they need further transfusion in future. We will also cover which reactions should be reported, both locally in your hospital and nationally to SHOT.

Introduction

Febrile and allergic reactions are among the most common reactions to transfusion.

It is important to recognise them promptly because:

- A severe allergic reaction can be life-threatening and need urgent treatment
- A severe febrile reaction could indicate a haemolytic reaction or bacterial infection

It is equally important to distinguish <u>mild</u> reactions, as transfusion can often continue after appropriate assessment and treatment. This avoids wasting blood components or delaying a necessary transfusion.

You need to use the patient's symptoms and signs to distinguish febrile from allergic reactions because they require different investigation and treatment.

SHOT reporting

SHOT collects reports of febrile and allergic reactions of at least moderate severity – as defined by the ISBT classification you see here.

Mild reactions, that is a temperature rise of less than 2 degrees with no other symptoms, or just a rash, do *not* need reporting.

Around 300 reports are recorded each year – that's about 1 for every 7000 components transfused. Red cells are more likely to be associated with febrile reactions, while allergic reactions are more often seen with platelets or FFP.

<u>Cause</u>

What causes febrile and allergic transfusion reactions?

Allergic reactions are generally to proteins in the donor's plasma – that's why they are more common in components with a higher plasma content.

Febrile non-haemolytic reactions can be due to residual white blood cells in the component or cytokines built up during storage.



Most reactions are specific to that *particular* donation – so the majority of patients won't react again to future transfusions.

Symptoms

What symptoms would suggest a febrile or allergic transfusion reaction?

Allergic reactions can include rash, itch, wheeze or swelling. Anaphylaxis is a severe, generalised reaction with rapidly developing respiratory or circulatory compromise.

Febrile-type reactions involve fever, sometimes with rigors, and inflammatory symptoms such as myalgia, nausea and breathlessness without wheeze. Inflammatory symptoms can indicate a febrile-type reaction even if the patient does not have a recorded rise in temperature.

Mixed reactions have both allergic and inflammatory features.

<u>Assessment</u>

What should you do if your patient displays symptoms of a transfusion reaction?

First - pause the transfusion but leave the bag connected. Review the patient's symptoms and clinical observations and use these to classify the type of reaction and its severity. Tables like this traffic-light guide can help.

Consider whether the symptoms are in keeping with the patient's underlying condition. In this case, assessment remains important but further detailed investigations for a transfusion reaction may not be required.

Patients with moderate or severe febrile-type reactions may warrant investigations to exclude a haemolytic reaction or bacterial infection. Talk to the transfusion lab and follow your local guidelines.

If laboratory investigations are normal, this does not mean the patient's symptoms were not due to transfusion. In a febrile non-haemolytic reaction, lab investigations are expected to be normal.

Managing mild reactions

What treatment should be given for patients with mild reactions, such as a rash or a small rise in temperature?

Treat allergic reactions with an antihistamine.

Steroids take hours to act and are only useful in more severe allergic reactions to prevent delayed hypersensitivity. In most patients they are of no benefit, and they might cause other adverse effects.

For febrile reactions, give paracetamol. Antihistamine and steroids are of NO BENEFIT.



If the patient's symptoms settle it is usually possible to resume the transfusion with closer monitoring.

Managing recurrent reactions

A small proportion of patients suffer recurrent reactions.

For recurrent febrile reactions, give paracetamol 1 hour before transfusion. Don't give antihistamine or steroid, as these will have no effect.

For recurrent allergic reactions to platelets, try pooled rather than apheresis platelets. These are suspended in an additive solution, with only a small amount of residual plasma.

If reactions continue in spite of this, give antihistamine an hour before transfusion. Steroids are not recommended because of their slow onset of action – and patients receiving regular transfusions risk accumulating a significant dose.

If these measures are not effective, consider washed red cells or platelets. Remember these have to be ordered specially, have a shorter shelf life and a higher cost – so try the simple steps first.

<u>Case</u>

Let's look at a case study from the SHOT files.

A female in her 20s with aplastic anaemia was transfused a unit of apheresis platelets in day care. 15 minutes in she developed rigors, sweating, anxiety, tachycardia and shortness of breath without wheeze.

Here are her observations:

Pre-transfusion observations: T36.6, BP 116/76, HR 80, RR 15, Sats 99% At time of reaction: T36.6, BP 124/72, HR 102, RR 15, Sats 99%

Apart from a small increase in heart rate, there is little change from baseline. She is not hypotensive.

She was treated with chlorphenamine, hydrocortisone and intramuscular adrenaline and was admitted for observation. She recovered within a few hours and a plan was made to give chlorphenamine and hydrocortisone as premedications before any future platelet transfusion.

In fact, this reaction had no allergic features. Although she had no recorded fever, her symptoms are inflammatory, and treatment with paracetamol alone would have been appropriate. Antihistamine and steroid would have no benefit, and adrenaline could have been harmful. Paracetamol could be used before future transfusions – not antihistamine and steroid.



Take home messages

To summarise:

Febrile and allergic reactions are common, so be ready and confident in managing them.

Use the patient's symptoms to distinguish between an allergic and a febrile-type reaction.

Treat febrile reactions with paracetamol: antihistamine and steroids are of no benefit.

Report all moderate reactions to your transfusion team and inform the lab immediately of any severe reactions.