BLOOD BANK MANAGEMENT OF TRANSFUSION REACTIONS DUE TO POSSIBLE BACTERIAL CONTAMINATION

REASON FOR ISSUE: Additional guidance on culturing empty blood component bag.

1. SCOPE:

This information sheet is intended as a guideline for DHB Blood Banks.

2. GUIDELINES:

2.1 Which transfusion reactions should be investigated for bacterial contamination?

Investigate for bacterial infection if **one or more** of the following signs occurs within 90 minutes of transfusion:

Fever	Temperature ≥39˚C or rise of ≥1.5°C
Rigor	Shaking, chills
GIT Symptoms	**Nausea and vomiting**
Tachycardia	Heart rate ≥120/min or rise of ≥40/min
Drop or rise of systolic BP	≥ 30mm Hg

These may be associated with nausea and vomiting, shortness of breath and lower back pain. Platelet components carry a higher risk of bacterial contamination and all febrile transfusion reactions involving platelet components should be investigated for bacterial contamination.

2.2 What should the Blood Bank do when informed of a transfusion reaction that meets the above criteria?

1. Contact the clinical team and put them in touch with NZBS MO / TMS if necessary.
2. Advise the clinical team that a blood culture from the recipient will be appropriate.
3. Inform NZBS MO / TMS.
4. Save and collect, aseptically if possible, all blood component units transfused within 90 minutes of the reaction diagnosis.
5. Obtain recipient's post-transfusion blood sample, for transfusion reaction investigation.
6. Ensure that the clinical teams have taken bacterial cultures on the patient also if there is a strong suspicion of a bacterial transmission
7. Record if the patient is already neutropenic or septic and is on anti-biotics already.

2.3 What should the Blood Bank do with the post-transfusion sample and the blood components?

1. Post transfusion blood sample - investigate for haemolytic transfusion reaction (visual and clerical checks, blood group, DAT, antibody screen, and IAT crossmatch).
2. Send all implicated units to the microbiology laboratory for Gram stain as soon as possible. Gram stain is positive if there are 2 or more bacteria / high power field.
3. Send all implicated units to microbiology for culture as soon as possible. Both aerobic and anaerobic culture to be done using the usual blood culture methods. If the bag is likely to be contaminated, culture both the bag and the segments. If there is not enough sample in the bag or the bag is empty discussion may be required with the microbiology laboratory scientist on rinsing the bag with culture broth or saline, re-aspirated to be used for inoculation..
4. Inform the clinical team of any positive result immediately and advise on a follow-up in a few days..
5. Inform Blood Centre of any positive culture result immediately.

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2.4 What additional information will the NZBS Haemovigilance team require?

Component units:	Gram stain results and culture results including information about the sample source and quality (bag, segment etc).
Transfusion recipient:	Details of signs, symptoms and outcome. Blood culture results (both pre and post transfusion). Antibiotics used (both pre and post transfusion).