Introduction of bacterial screening of platelet components

Information for Hospital Transfusion Teams

Because of the need for storage at room temperature (22°C), bacterial transmission by platelets remains a small, but clinically significant problem in all healthcare systems. This is the main reason for the current short shelf-life of platelets (5 days after donation). The risk has been reduced in recent years by improved donor arm disinfection and diversion of the first 30ml of each donation, but a number of transmissions still occur each year (SHOT Report 2009: http://www.shotuk.org/wp-content/uploads/2010/07/SHOT2009.pdf). To further reduce the risk, NHSBT, in line with the other UK Transfusion Services, is introducing automated bacterial screening of platelet components.

NHSBT will be implementing bacterial screening of platelet components from late January 2011 and achieving 100% testing by the end of March 2011. As platelets are moved around the country, any hospital may receive screened platelets from the beginning of the implementation programme.

Components will be sampled at a minimum of 36 hours after collection, and held for at least 6 hours after sampling and both aerobic and anaerobic culture will be performed. They will undergo validation and labelling after 6 hours and will then be available for issue. The shelf life of the screened platelets will be extended to 7 days and culture of the sample will continue throughout this time.

An initial reactive (IR) result means that the automated test system has identified a possible positive test, at which point components will be quarantined if still in the blood centre (as most still will be), or recalled from hospitals if issued.

Further testing will immediately take place to identify if it is a true or false positive. If a true positive, further work will be done to identify the organism. Culture of samples will continue until the end of the shelf life of the component.

How often will this occur?

During the NHSBT evaluation of bacterial screening the initial reactive rate was 0.02% and the confirmed positive rate was 0.01%. This translates to only 48 platelet units per year or approximately one per week being flagged-up nationally across all NHSBT Centres as initial reactive (NHSBT issues approx. 240,000 platelet units per annum). As some of the platelet donors will have donated other components, such as red cells, an average of two components each week nationally is predicted.

It is emphasised that the majority of initial reactive results will be flagged before the component leaves the Blood Centre but if platelets have already been issued, and possibly transfused, the following information should be used to guide what action to take.
Actions when initial reactive platelets have been issued to hospitals

The Hospital Transfusion Department will be contacted by the Hospital Services Department to give the information that the platelet unit has shown an initial reactive result and that further confirmatory testing will be done. This information can become available at any time of the day or night.

Please note that approximately 50% of initialreactives are NOT subsequently confirmed as positive, although it is not possible at this stage to identify whether the result represents a true or false positive.

1. If the platelet unit has not been transfused, a replacement unit will be offered and the recalled unit will be collected for further investigation at the National Bacteriology Laboratory. If the platelet transfusion is required urgently, NHSBT will ‘blue light’ a replacement component.

2. If the platelet unit has already been transfused, the hospital haematologist is advised to liaise with the clinician looking after the patient and the hospital microbiologist.

   - The recipient should be reviewed for any adverse reaction to the transfusion. Most bacterial contaminations result in immediate reactions, with fever and hypotension, but a delayed reaction is possible. Any adverse event can then be managed in the knowledge that bacterial contamination is suspected.

   - Even if there is no documented reaction, additional observations of the patient and the taking of blood cultures is recommended and prophylactic antibiotic therapy should be considered depending on the clinical status of the patient.

   - If the remains of the pack are still available, NHSBT will arrange to collect the unit for further investigation.

   - Further advice is available 24 hours a day from the on-call NHSBT Patients Team consultant, if required.

In all cases, the Haematologist/Hospital Transfusion Team will be informed of the results of confirmatory testing as soon as it is available (this may take up to one week depending on the organism). If contamination is confirmed, the Hospital Transfusion Team will be informed of the organism involved, and antibiotic sensitivities.

A follow-up letter from NHSBT will confirm the reason for and outcome of any investigations in order to close the recall process.

Regards

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