NHS
Blood and Transplant

25 November 2019

Changes to neonatal platelet pack specification

Dear colleague,

We are writing to inform you about changes to the neonatal platelet specification that will come into operation on January 14th 2020. All neonatal platelet components manufactured by NHSBT from that date onwards will be to the new specification.

Background
The reason for changing the specification is to improve the quality of neonatal platelets for transfusion. pH is a marker of platelet concentrate (PC) quality, with lower pH correlated with worse in vivo platelet recovery and survival (pH progressively falls over storage). NHSBT guidelines recently adopted in line with a future change to UK guidelines require 90% of neonatal PCs to have a pH at or above 6.4 at expiry. However, despite a number of improvements to platelet processing, quality monitoring indicates that this target is not consistently being achieved (although neonatal PC pH is still compliant with the current UK guidelines).

Revised neonatal platelet specification
To attain consistent compliance with the revised 90% pH requirement, NHSBT has reviewed a number of options. The most practical and effective is the addition of a small proportion (approximately 13 ml per pack or 20% by volume) of Platelet Additive Solution (PAS) to the plasma in neonatal platelet packs. This improves pH buffering and other measures of platelet quality during storage. PAS (65-70% in plasma) is already used for suspending standard pooled platelet concentrates used for adults and older children, and PAS is used by some other countries for neonatal platelets. The Joint UK Blood Transfusion Services Professional Advisory Committee (JPAC) has reviewed and approved the new specification for neonatal platelets in plasma and additive solution.

Clinical implications
One potential clinical implication of the addition of approximately 20% PAS to neonatal platelet packs is likely to be a 20% reduction in the platelet dose transfused for a given volume. However, it is considered that a 20% reduction in dose is unlikely to be clinically significant, particularly for transfusions given as prophylaxis for non-bleeding neonates. In settings such as cardiac surgery where neonates may be bleeding and transfusion volume is less of a consideration, clinicians may choose to transfuse higher volumes by utilising the additional volume in the new neonatal platelet packs.

It is important to note that neonatal platelet transfusion doses are already relatively much higher than for adults – the commonly transfused neonatal platelet volume of between 10-20ml/kg (New et al, 2016 BSH guidelines (https://b-s-h.org.uk/guidelines/guidelines/transfusion-for-fetuses-neonates-and-older-children) whereas it is approximately 2-4 ml/kg for adult recipients transfused with a single pack of apheresis platelets.
In view of considerations around transfusion associated circulatory overload (TACO) it is suggested that hospitals do not increase the transfused volume of the new

platelet component in order to compensate for the 20% dilution in non-bleeding neonates.

Timelines and actions for hospitals

The new neonatal platelet specification will come into operation on January 14th 2020. All neonatal platelet components produced from that date onwards will be to the new specification although due to the 7 day shelf life there will both neonatal platelet types in circulation for the first week. There will be no increase in cost to hospitals associated with this change.

The component bar code specifications and product descriptions are available on the NHSBT hospital and Science website now (https://nhsbtdbe.blob.core.windows.net/umbraco-assets-corp/17298/neonatal-spec-and-bar-codes-v2.pdf) and the component portfolio will be updated shortly. Please ensure the bar codes are loaded onto your LIMS in time for the January 14th 2020 implementation date.

Hospital Transfusion Hospital transfusion teams are requested to share this information with clinical colleagues who use neonatal platelets to transfuse neonates or infants.

If there are any queries arising from this, please contact your Customer Services Manager or Patient Blood Management Practitioner in the first instance. Alternatively, you can email Lucy Frith, NHSBT Process Improvement Manager direct at lucy.frith@nhsbt.nhs.uk.

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