

**British Committee for Standards in Haematology (BCSH)
Guideline on the Administration of Blood Components**

Addendum August 2012

Avoidance of Transfusion Associated Circulatory Overload (TACO) and Problems Associated with Over-transfusion.

The Serious Hazards of Transfusion (SHOT) 2010 Annual Report recommends that the existing BCSH guidelines for the Administration of Blood Components should be supplemented by an amendment dealing with measures to avoid the development of TACO and over-transfusion, particularly in vulnerable patients, including pre-transfusion clinical assessment, rate of transfusion, fluid balance, regular monitoring of haemoglobin (Hb) and prescription of diuretics.

This recommendation follows a number of incidents reported to SHOT where there was found to be inadequate medical assessment of patients during the prescription and monitoring of the transfusion episodes. Salient findings included the following:

- Lack of attention to fluid balance, particularly in elderly patients >70 years and those with concomitant medical conditions that predispose to TACO: cardiac failure, renal impairment, hypoalbuminaemia and fluid overload.
- A lack of appreciation that the rate of transfusion is another risk factor in the development of TACO.
- There is over-transfusion due to a lack of consideration of the patient's body weight when prescribing red cells. Whilst there is uncertainty over the correct dose of red cells given the weight of the patient, the notion that one unit of red cells gives an increment of approximately 1g / dl Hb can at best only be applied to a 70-80 kg patient, and for patients of lower body weight the prescription should be reduced.
- There is over-transfusion in patients with minor but ongoing blood loss, owing to the lack of regular monitoring of the Hb after every 2-3 units of red cells.

(SHOT 2011)

Whilst the BCSH Guideline for the Administration of Blood Components (2009) was not intended as a guide to the appropriate use of blood components, it does provide guidance to the prescription and administration of blood components. The BCSH Transfusion Task Force agree that guidance to prevent TACO and over-transfusion needs to be strengthened. Therefore the following recommendations are made:

- The decision to transfuse must be based on a thorough clinical assessment of the patient and their individual needs. The rationale for the decision to transfuse and the specific components to be transfused should be documented in the patients' clinical records.
- This clinical assessment should include an evaluation of the patient's age, body weight and concomitant medical conditions that predispose to TACO: cardiac failure, renal impairment, hypoalbuminaemia and fluid overload. These factors should be documented in the patients' clinical notes and should be considered when prescribing the volume and rate of the transfusion, and in deciding whether diuretics should be prescribed.
- For patients identified at risk of TACO, a written request should be made that during the administration of blood components, specific attention should be given to monitoring the patient for signs of circulatory overload, including fluid balance. The rate of transfusion should be carefully assessed, as TACO can occur after only one unit of red cells in at risk patients.
- As a general guide, transfusing a volume of 4ml/kg will typically give a Hb increment of 1g/dl. The concept that one unit of red cells gives a Hb increment of 1g/dl should only be applied as an approximation for a 70-80 kg patient. For patients of lower body weight the prescription should be reduced.
- Paediatric transfusions should be prescribed in mls. This may also be appropriate for very low body weight adults, as may the use of smaller volume paediatric packs. This should be discussed with the hospital transfusion laboratory, and specific guidance given to the clinical staff administering these unfamiliar components.
- Single unit red cell transfusions are recommended where possible, especially in non-bleeding patients.
- An indication of whether the transfusion achieved the desired effect (either post transfusion increment rates or improvement in patient symptoms) should be documented in the patient's clinical records. In the absence of significant ongoing blood loss, further units should not be prescribed without monitoring the patients Hb. In patients with minor but ongoing blood loss, Hb should be regularly monitored, as a minimum after every 2-3 units of red cells.
- Organisations should have a protocol for the investigation and treatment of suspected TACO.

Consent for Blood Transfusion

In October 2011, the Advisory Committee for the Safety of Blood, Tissues and Organs (SaBTO) announced their recommendations following a consultation exercise looking at Consent for Blood Transfusion.

Their key recommendation, which states that valid consent for blood transfusion should be obtained and documented in the patient's clinical record by the healthcare professional, is already a recommendation made in the BCSH Guideline on the Administration of Blood Components (2009). However, SaBTO also made the following recommendations which relate directly to clinical care. The BCSH Transfusion Task Force endorse these recommendations:

- There should be a modified form of consent for long term multi-transfused patients, details of which should be explicit in an organisation's consent policy.
- There should be a standardised information resource for clinicians indicating the key issues to be discussed by the healthcare professional when obtaining valid consent from a patient for a blood transfusion. This resource document is now available at:
<http://www.transfusionguidelines.org.uk/index.asp?Publication=BBT&Section=22&pageid=7691>
- There should be a standardised source of information for patients who may receive a transfusion in the UK. Standardised information leaflets are available from the UK Blood Transfusion Services.
- Patients who have received a blood transfusion and who were not able to give valid consent prior to the transfusion should be provided with information retrospectively. A 'good practice guidance' document to help identify the most effective way of providing information retrospectively has been developed by SaBTO and is available at:
<http://www.transfusionguidelines.org.uk/index.asp?Publication=BBT&Section=22&pageid=7691>

SaBTO also made other recommendations relating to patient, public and healthcare professionals education requirements and to clinical governance measures for consent for blood transfusion. Full details are available from the Department of Health Website (www.dh.gov.uk).

References

SaBTO (2011) *Patient Consent for Blood Transfusion*

www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_130716?ssSourceSiteId=ab

S Knowles (Ed.) and H Cohen on behalf of the Serious Hazards of Transfusion (SHOT) Steering Group. *The 2010 Annual SHOT Report (2011)*

www.shotuk.org/home