

# National comparative audit of platelet transfusions 2010

## Key Findings of the audit with regard to the inappropriate use of platelet transfusions

1. The audit found 28% (915/3296) inappropriate use of platelet transfusions using algorithms for defining appropriateness based on the most recent BCSH guidelines for platelet transfusions. Inappropriate transfusions were mostly because of prophylactic platelet transfusions above the recommended thresholds and the use of platelet transfusions for procedures such as bone marrow aspirate/trephine which can be safely conducted without platelet cover.<sup>1</sup>
2. The majority, 69% (2283/3296) of the platelet transfusions, were prophylactic and 34% (782/2283) of these were considered to be inappropriate, mostly 26% (602/2283) because of transfusion above the recommended platelet count threshold but also 8% (180/2283) were administered as prophylactic transfusions to patients with myelodysplastic syndrome (MDS) who did not have additional risk factors for bleeding. An additional 6% (126/2283) were indeterminate because no recent platelet count had been performed and possibly inappropriate.
3. 10% (220/2277) of prophylactic platelet transfusions were double-dose transfusions (in 6 cases the dose was not reported). The majority, 73% (161/220) of double-dose transfusions, were administered to inpatients. A recent large randomised controlled trial has shown no difference in the number of patients who had significant bleeding (WHO grade 2 or above) when they received single or double-dose platelet transfusions.<sup>2</sup>
4. Pre-invasive procedure platelet transfusions accounted for 15% (497/3296) of all transfusions and 23% (114/497) were inappropriate. The major reasons for inappropriateness were transfusions before bone marrows in 9% (45/497) (it is explicitly stated in the BCSH guidelines<sup>1</sup> that this usage is unnecessary) and use of too high a threshold in 14% (69/497).
5. Therapeutic transfusions accounted for 13% (412/3296) of all transfusions and fewer than 5% (19/412) were considered inappropriate.
6. The survey showed that the routine use of platelet transfusions in patients with long term bone marrow failure (e.g. MDS) (36% (43/119) sites surveyed) and prior to bone marrow trephines (23% (27/119) sites) reflected local guidelines that differed from those issued by BCSH.<sup>1</sup>

## Recommendations of the audit with regard to the use prophylactic platelet transfusions

1. **Local guidelines should be based on existing BCSH guidelines, and fully implemented to avoid the inappropriate use of prophylactic platelet transfusions and those given before invasive procedures.** In particular, they should specify that a platelet transfusion is **not** required routinely: –
  - Prior to bone marrow aspiration and biopsy
  - As routine prophylaxis in stable patients with long term bone marrow failure
2. **Double-dose prophylactic platelet transfusions should not be used routinely.**

<sup>1</sup> BCSH. British Committee for Standards in Haematology: Guidelines for the use of platelet transfusions. Br J Haematol 2003; 122: 10-23.

<sup>2</sup> Slichter SJ, Kaufman RM, Assmann SF, McCullough J, *et al* (2010). Dose of prophylactic platelet transfusions and prevention of haemorrhage. *New England Journal of Medicine*;362:600-13.