

Trial of Prophylaxis vs. No-Prophylaxis Platelet Transfusions in Patients with Haematological Malignancies (TOPPS)

The Research Question:

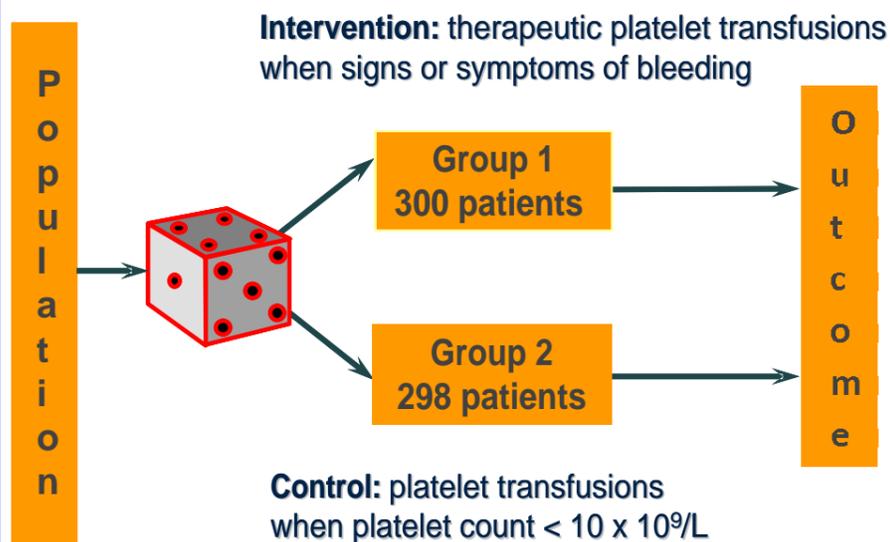
Is a No-Prophylaxis policy for platelet transfusions for patients with haematological malignancies not worse than (*Non-Inferior to*) a prophylaxis policy triggered at a level of $10 \times 10^9/L$, as judged by WHO Grade 2,3,4 bleeding up to 30 days after randomisation?

Background

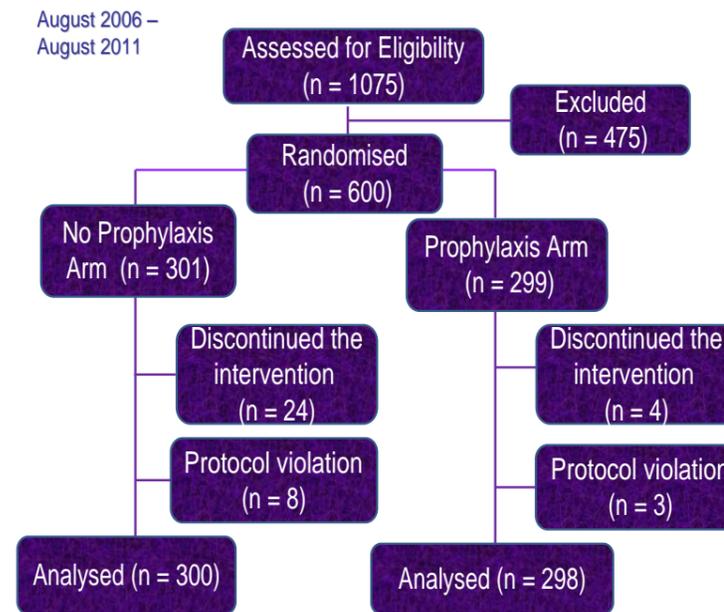
- Platelet demand is rising
- Maintaining supply is challenging.
- Haematology patients are the highest users, with platelets given to manage bleeding in thrombocytopenia.
- Treatment can be either therapeutic or prophylactic
- >60% platelets are used for prophylaxis

Primary Outcome: Proportion of patients with WHO grade 2 or above bleeding

Methods: eligible patients were randomised to receive either prophylactic transfusions, or to no-prophylaxis with transfusions given only after documented signs & symptoms of bleeding.



Results



This study did *not* demonstrate that a no-prophylaxis approach is non-inferior.

- WHO grade 2-4 bleed occurred in 50% of patients in the no-prophylaxis group compared to 43% in the prophylaxis group.
- Patients in the no-prophylaxis group had more days with bleeding, and a shorter time to first bleed.
- Platelet usage was markedly reduced in the no-prophylaxis group (59% vs. 89%)
- No differences in length of stay or SAEs were seen between groups.

Conclusions from TOPPS

- The results support the continuing use of prophylaxis in patients with thrombocytopenia
- The proportion of patients with Grade 2-4 bleeding was reduced by 7% with prophylactic platelet transfusions
- There is still a high burden of bleeding in many patients, despite prophylaxis.
- The benefit of prophylactic platelet transfusions in the sub-group of patients undergoing low-risk autografts was less clear.

What Next?

- Investigate role of prophylactic transfusions in sub-groups, such as autograft patients
- New studies to improve our understanding of the risk factors for major bleeding
- Investigate alternative strategies to manage the high burden of bleeding that exists despite prophylaxis
- Compare and contrast findings with other recently published platelet trials.

Many thanks to all the staff at the 14 haematology centres in the UK and Australia that took part in the study:

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