Avoidable transfusions reported to SHOT 2015-2016: how and why?

Paula HB Bolton-Maggs 1, 2, Debbi Poles 1

1 Serious Hazards of Transfusion (SHOT) Office, Manchester, UK, 2 University of Manchester, UK, on behalf of the SHOT Steering Group.

Introduction: Although blood transfusion may be life-saving there may be alternatives. SHOT collects data about avoidable transfusions, where the blood/blood component is suitable and compatible but where the decision leading to transfusion is flawed. This may be due to poor knowledge, communication failure, incorrect decision or poor prescribing.

Method: The SHOT database was reviewed for avoidable transfusions reported in 2015 and 2016.

Results: In this 2-year period 257 avoidable transfusions were reported. One patient died after developing cardiac decompensation related to excessive transfusion of 2 units when 1 would have been sufficient.

Inappropriate use of O D-negative units: In 39 cases emergency O D-negative units were given when there were either crossmatched or group-compatible units accessible, about 50% (Fig 1). Other reasons included failure to arrange blood for major surgery and mistakes such as labelling errors resulting in delayed provision of appropriate units. Group O D-negative blood may not be safe for patients with irregular antibodies such as anti-Jk2 (one case) and is wrong for patients with anti-c (transfused to an infant with haemolytic disease of the newborn due to failure of communication).

Wrong results: Patients were transfused as a result of erroneous blood results in 65 cases. The reasons included wrong results due to dilute samples taken from an arm with intravenous fluid running. Spurious low platelet counts due to clumping were noted in 23, and wrong results from blood gas analysers or point of care devices in 8 cases. Other causes included transfusion based on results from the wrong patient, the wrong year, and transcription errors.

Avoidable transfusions were given to 17 patients with iron deficiency and 3 with megaloblastic anaemia, one of whom developed transfusion-associated circulatory overload as a result. FFP was transfused to 5 patients for warfarin reversal instead of prothrombin complex concentrates. Five patients with religious objection to blood received red cell transfusions.

SHOT Messages

- Transfusion can usually be avoided in iron, B12 and folate deficiency. When oral iron cannot be tolerated, single dose IV iron is safe and very effective, and is now a recommended treatment for iron deficiency particularly before surgery.
- Unexpected thrombocytopenia should prompt film examination and review of previous results. Results which may be inaccurate should not be issued from the laboratory. Clinical staff should make a diagnosis before transfusing platelets.