Serious Hazards of Transfusion (SHOT) reports relating to anti-D immunoglobulin in 2010

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Background

Although it is a medicinal blood product rather than a labile blood component, adverse events associated with anti-D immunoglobulin are included in the annual SHOT report as they provide a useful insight into process errors which may be applied to transfusion as a whole.

Numbers of Anti-D reports have progressively increased over the last 13 years, reflecting an increased awareness of the need to report this type of event.

Analysis

Who made the errors?

- Midwives 178 (74 %)
- Laboratory 51 (21 %)
- Medical staff 12 (5 %)

Omission or late administration n = 166

- Primary error made by midwife in 139 cases
- 46 cases in the community and 120 in hospital.

Anti-D given to RhD positive patients n = 26

- Primary error made by Midwives (13), Laboratory (11), Medical Staff (2)

Anti-D given to patients with immune anti-D n = 17

- Primary error made in laboratory (8) and clinical area (9)

Anti-D given to mothers of RhD negative infants n = 8

- Laboratory errors (4) and midwife errors (4)

Anti-D given to the wrong patient n = 8

- All were clinical errors due to misidentification of the patient in the clinical area, 7 in a hospital setting and 1 in the community

Wrong dose of anti-D given n = 12

- 6 were laboratory errors, 4 were midwife errors and 2 involved medical staff
- 10 cases were in a hospital and 2 in the community

Handling & storage errors n = 4

- 3 involved inappropriate storage and handling of anti-D in the clinical area
- 1 case involved the recording of batch numbers in the laboratory

Commentary

Many of the cases involve:

- Failure to follow basic clinical and laboratory protocols
- Transcription errors
- Testing errors
- Ignoring / overriding hazard flags on IT systems
- Failure of communication
- Lack of knowledge and understanding of the principles of anti-D prophylaxis
- Issue of anti-D from stocks held in the clinical area outside of a robust system

Recommendations

- Administer anti-D if there is doubt as to RhD type or as to whether detectable anti-D is immune or prophylactic (BCSH guidelines)
- RhD typing should be performed by routine laboratory methodology. Emergency manual techniques may not be as robust
- Follow HSC 2007/001 ‘Better Blood Transfusion’ requirements regarding patient ID, recording and traceability
- Obstetricians, midwives and laboratory staff must be familiar with national guidance relating to Routine Antenatal Anti-D Prophylaxis (RAADP) and should complete the anti-D modules on the LearnBloodTransfusion e-learning programme
- There should be clinical follow-up and retesting in 6 months of patients in whom anti-D administration has been delayed or omitted

Results

Anti-D Events in 2010 n = 241

- 59 cases where anti-D was inappropriately administered – unnecessary exposure to a human blood product
- 166 cases where anti-D was delayed or omitted, putting the patient at risk of sensitisation to the D antigen – potential for Major Morbidity
- 12 cases where the wrong dose of anti-D was administered - potential for under-dosing
- 4 handling and storage errors

Anti-D Events 1996 - 2010

- 0
- 50
- 100
- 150
- 200
- 250
- 300

Year of Report

- 1998-99
- 1999-00
- 2000-01
- 2001-02
- 2003
- 2004
- 2005
- 2006
- 2007
- 2008
- 2009
- 2010

Number of Reports