

Anti-D Administration Errors 2008/2009

Joan Fitzgerald
National Haemovigilance
Office Conference 2010

Current Indications for Anti-D Immunoglobulin

- Prophylaxis following antenatal sensitising events
- Postnatal prophylaxis
- *Routine antenatal prophylaxis*
- Following transfusion of RhD positive platelets in females of childbearing potential
- Following transfusion of RhD positive red cells in female of child bearing potential
- Chronic ITP (RhD positive patients only-IV Anti-D)

Causes of anti-D sensitisation

- Failure to give anti-D for antenatal sensitising event or following delivery of RhD pos baby
- Inadequate dose of anti-D (large FMH)
- Silent FMH events (estimated to account for 50% of RhD alloimmunisations) which occur mainly in the last 12 weeks of pregnancy

2008 errors

- 29 reports of serious adverse events associated with Anti- D Ig administration.
- Increase of 45 % compared to 2007.
- 12 Anti-D Ig omissions (All antenatal)
 - 10 cases occurred in general hospital emergency departments
 - In at least 2 of these cases the patient has subsequently become sensitised to Anti D Ig.
- 13 Anti-D administration delays
- 4 cases of incorrect administration anti-D Ig (either RhD neg fetus or already immune)

2009 Errors

- 27 reports received in 2009.
- 2 omissions to give anti-D Ig
- 17 delays in Anti D Ig administration –14 occurred in antenatal patients
- 8 reports of incorrect administration of anti D Ig

2009 errors -Where and Who were involved

- Majority 17(63%) occurred in the clinical area.
- Doctors were involved in 8 (47%) and midwives in 3 (18%) of clinical SAE /IBCT.
- Unclear in the 6 remaining (35%) events, whether it was a doctor or a midwife.

Failure to follow up on results

- A patient at 14 weeks gestation attended the ED following a antenatal sensitising event.
- She was reviewed by a doctor and her bloods were taken for blood grouping but results were not followed up.
- The omission was subsequently discovered at the patient's (initial) planned booking visit to the same hospital, where it was noted the patient was RhD negative.
- Following this event, a formalised follow-up procedure for the review of results and administration of anti-D Ig has been introduced in the ED

Problem with Verbal Report Omission of Anti D Ig

- A patient at 16 weeks gestation was undergoing an amniocentesis.**
- A verbal report from the HBB that the patient's blood group was Rh D positive was incorrect and the patient did not receive Anti-D Ig.**
- Following this event, the HBB no longer provides clinical staff with a verbal report on the patient's blood group, and the clinical staff must now check it on the LIS.**

Difficulty in typing cord sample

- Administration of Anti D Ig was delayed due to a difficulty in interpreting the cord bloods.
- RhD neg mother-following delivery cord blood samples were sent to the laboratory at a weekend.
- The HBB scientist interpreted the cord blood sample as Rh D negative but was not completely satisfied with the result.

- Repeat sample from baby showed a similar result, therefore both the cord and baby samples were sent to the reference centre for further analysis.
- The reference centre found the cord sample to be Rh D positive (weak D type) but the delay resulted in the Anti D Ig being administered > 72 hours post-delivery.

Discharge before Anti-D Ig

- 5 antenatal patients were discharged prior to receiving Anti D Ig. In all cases blood samples had been taken for screening
 - 4 ante natal patients who attended the ED for sensitising events were discharged prior to assessment for eligibility for anti-D Ig as samples were not processed in the HBB outside routine working hours.
 - In 2 cases, patients indicated they were unable to return at the time advised.

Antenatal Anti-D Ig Delay

29 year old lady

- 24 weeks gestation, presented to the ED on Sun amg, approx. 18 hours following a fall over a bank holiday weekend.
- Sample taken for baseline blood group and antibody screen. The HBB did not process this sample until the following Tues. am.
- The request form did not include any details as to when the fall had occurred and Anti D Ig was issued later that evening which was >72 hours following the sensitising event.
- The patient was unable to attend the ED immediately and only received Anti D Ig 5 days after sensitising event.

Anti-D Ig given to a previously sensitised patient

- 3 cases
- In one case the patient was known to have immune anti-D in her serum and Anti D quantitation had been carried out about 8 days prior to delivery
- She delivered a Rh D positive baby and following delivery, the obstetric registrar on call contacted the haematology team and was advised not to administer Anti-D Ig.
- However, the obstetric register subsequently prescribed Anti D Ig. The basis for the clinical decision remained unclear.

- In 2/5 cases the stock of Anti D Ig was maintained in the clinical area and therefore was not under control of the HBB.
- In a antenatal case, the doctor was aware that the patient had formed anti-D, but mistakenly thought administering Anti-D Ig would prevent a further boosting of the level following a PV bleed.

- Following the event, the HBB staff must now check blood group prior to issuing Anti D Ig.
- No reference made in the hospital to review of the clinical procedures

Incorrect Anti-D Ig administration - a number of errors

Unnecessary administration to post natal patient

- Baby was Rh D negative but Anti D Ig was prescribed in the patient's transfusion record. The reason for this prescription was never clarified.
- Anti D Ig was issued by the HBB to the clinical area on the basis of the order. There was no policy in the HBB to check the patient's blood group prior to issuing Anti D Ig.
- The post natal ward was covered by locum staff nurses from the gynaecology ward, where it would have been unusual practice to administer Anti D Ig.
- The nurses on duty assumed that because it was issued by the HBB that the patient should receive it and they administered the Anti D Ig to the patient.

Unnecessary Anti-D Ig

- A RhD neg woman underwent a caesarean section and subsequent hysterectomy for post-delivery complications.
- Anti D Ig was issued from the blood transfusion laboratory who had not been informed that the patient had had a hysterectomy.

- Clinical staff were unsure whether to administer the Anti D Ig. The hospital Anti D Ig guidelines did not indicate what action should be taken for Rh D negative woman post hysterectomy. After a clinical review it was decided to administer the Anti D Ig.
- The hospital guidelines have since been amended to clarify policy wrt Rh D negative women post- hysterectomy and tubal ligation

Anti-D Ig Delays/Omissions

- A review of reports received by NHO of both delays and failures to administer Anti D highlighted that women in ante natal care are more likely to be exposed to these adverse events than women in post natal care.

- Anti D Ig should be administered as soon as possible after a sensitisation and always within 72 hours after an event (BCSH,2006).
- Hospitals should review both clinical work processes and the prioritisation of laboratory testing for patients with potentially sensitising events.

- Where patients with potential sensitisations attend the emergency department /obstetric unit outside routine laboratory working hours and especially over long weekends or holiday times, it is important that robust procedures are in place to ensure that the appropriate samples are taken ,analysed and results acted upon to ensure that anti-D Ig is administered within the recommended time frame.

- If patients are discharged prior to availability of results then this must be with the reassurance that follow-up will occur. Delay in sample taking and testing adversely impact on optimal time for administration of Anti-D Ig for all patients especially those who may not immediately attend the ED/ obstetric unit.

Inconclusive Serology

- If the hospital blood bank Rh D typing results are inconclusive or discrepancies are identified then there should a protocol indicating the procedure to follow.
- As noted in previous NHO reports (2004) such samples should be referred to a reference laboratory but that the hospital must have systems in place to ensure that those patients requiring Anti D Ig receive it and that it is not omitted or delayed.

- The blood transfusion laboratory must always be informed about the administration of anti-D Ig, to avoid confusion should the woman present at a later stage with anti-D detectable in her serum.

- Midwifery, medical and blood transfusion laboratory staff all need to be fully familiar with current best practice surrounding appropriate and timely administration of Anti-D Ig.
- Clear protocols and criteria should be in place for anti-D-Ig administration and assumptions should not be made that because anti-D Ig has been issued by a blood bank that the patient should receive it. This has implications for professional bodies, universities and hospital training departments including haemovigilance.

LearnBloodTransfusion Anti-D Clin/lab Modules

- e-learning modules for laboratory and clinical staff on anti-D Ig and antenatal testing (<http://www.learnbloodtransfusion.org.uk>)
- It is recommended that these modules are made available for training of clinical and scientific staff involved in antenatal testing and Anti-D Ig administration and that they perform the competency assessments within the modules.