SHOT Bite No. 29
Differences of reporting errors related to anti-D Ig and immune anti-D

SHOT Serious Hazards of Transfusion

March 2024

Background

Immune anti-D

This category was introduced in 2012 as a separate study from the standard SHOT reporting categories. Accordingly, SHOT has been reviewing cases where immune anti-D has been detected for the first time, in the current pregnancy, to improve understanding of the causes of continuing anti-D immunisations. The cases reported under this category are not included in the total number of SHOT reports analysed in the Annual SHOT Report.

Anti-D Ig errors

Events relating to administration of anti-D immunoglobulin (Ig) were included since the 1997/98 Annual SHOT Report. At present, this category includes adverse events relating to the requesting and/or administration of anti-D Ig during pregnancy or after delivery, and adverse events relating to administration of anti-D Ig to D-negative patients with childbearing potential including paediatric, following transfusion of D-positive blood components and following D-mismatch solid organ transplants.

Basic principles of Anti-D Ig errors and Immune anti-D

- Two different SHOT categories
- Two different SHOT definitions (see resources)
- Two different purposes
- Two different remits
- Managed differently by SHOT
- Might need two separate SHOT reports

Reactions to anti-D Ig **are not reportable to SHOT** but they are reportable to the Medicines and Healthcare Regulatory Agency (MHRA) via the 'Yellow Card' scheme for medicines (https://yellowcard.mhra.gov.uk/)

There are cases where the adverse event needs to be reported to both categories (two SHOT reports). These include cases where:

Event relating to requesting and/or administration of anti-D Ig during pregnancy or after delivery e.g., late or omitted anti-D Ig administration, wrong dose, false negative cffDNA screening result → **Anti-D**

AND

Alloimmunisation detected during pregnancy → **Immune anti-D**

Examples of the different remit for both categories

Is this event SHOT reportable?	Immune anti-D	Anti-D
Patient non-compliance resulting in immune anti-D	Yes	No
No error but patient found to have immune anti-D	Yes	No
Error with anti-D Ig administration but no D sensitisation	No	Yes
Error with anti-D Ig administration and D sensitisation confirmed	Yes	Yes
Sensitisation identified in pregnancy but reason unknown	Yes	Variable

Errors relating to requesting and/or administration of anti-D Ig during pregnancy or after delivery can cause D sensitisation

SHOT analysed **2963** incidents with potential to cause D sensitisation in D-negative women of childbearing potential due to omission or late administration of anti-D Ig (2012-2022)

Incorrect management of D-negative pregnancies with D-positive fetus including omission or late administration of anti-D Ig can result in **MAJOR MORBIDITY**
'Sensitisation to D or K in a woman of childbearing potential'
(SHOT definitions, 2024)

SHOT Bite No. 29
Differences of reporting errors related to anti-D Ig and immune anti-D

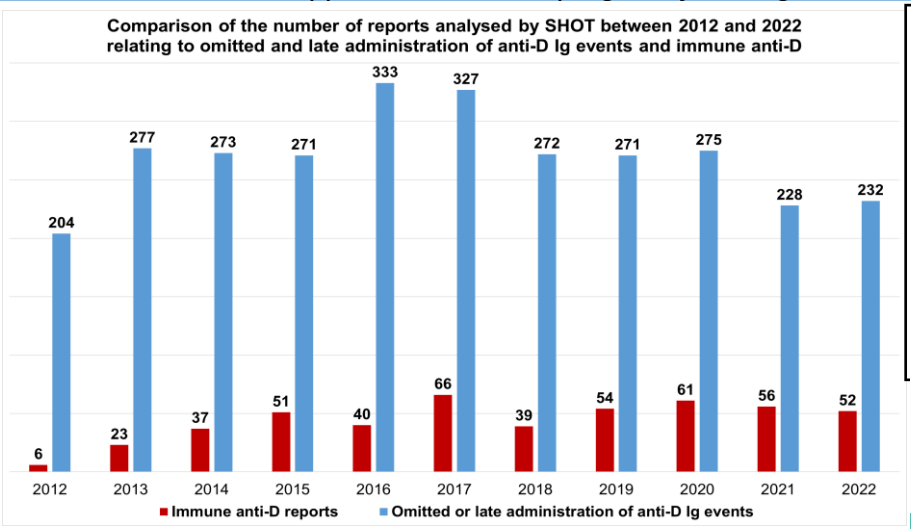
SHOT Serious Hazards of Transfusion

March 2024

SHOT reports relating to immune anti-D analysed from 2012 to 2022 (n=485)

Common themes

- Ideal management does not equal no sensitisation
- Delivery beyond 40 weeks may be a risk factor for sensitisation even when managed appropriately
- A postpartum fetomaternal haemorrhage >4mL may be a risk factor for sensitisation even when managed appropriately
- Women who are obese may not be adequately protected by standard doses of anti-D Ig
- There are missed opportunities where pregnancy management is not ideal



Other contributory factors:

- Mother D-status: D-variant
- cffDNA screening testing (false negative)
- Lack of IT systems interoperability (clinical and laboratory IT systems)
- Anti-D Ig errors
- Gap in knowledge
- Misinterpretation of results

Remember: Report all cases of alloimmune anti-D found for the first time in pregnancy to SHOT. Please provide a complete data set relating to index and previous pregnancies to help identify and understand risk factors for D sensitisation.

The impact of immune anti-D in pregnancies: the numbers (2018-2022)

Outcome of index pregnancy

4 miscarriages	230 live births
2 stillbirths	2 terminations
19 cases No information*	4 intrauterine deaths

**It is important that all details from index (current) and previous pregnancies are reported to help identify and understand the risks and causes for D sensitisation*

Number of cases where treatment was required for signs and symptoms of haemolytic disease of the fetus and newborn

- ✓ Phototherapy (n=59)
- ✓ Exchange transfusion (n=8)
- ✓ Phototherapy and intravenous immunoglobulin (IVIg) (n=4)
- ✓ Phototherapy and exchange transfusion (n=6)
- ✓ Phototherapy and intrauterine transfusion (IUT) (n=1)
- ✓ IUT and transfusion after delivery (n=1)
- ✓ Phototherapy, IVIg and exchange transfusion (n=4)

Useful and relevant resources

- ✓ Anti-D Ig Administration in Pregnancy- an aide memoire: https://www.shotuk.org/resources/current-resources/
- ✓ BSH guideline for the use of anti-D immunoglobulin for the prevention of HDFN: https://doi.org/10.1111/tme.12091
- ✓ BSH guideline for the Estimation of FMH: https://b-s-h.org.uk/guidelines/guidelines/the-estimation-of-fetomaternal-haemorrhage
- ✓ IBGRL Fetal screening: https://www.nhsbt.nhs.uk/ibgrl/services/molecular-diagnostics/fetal-rhd-screen/
- ✓ IBGRL Fetal genotyping – diagnostic: https://www.nhsbt.nhs.uk/ibgrl/services/molecular-diagnostics/fetal-genotyping-diagnostic/
- ✓ NICE guideline [NG201] – Antenatal care: https://www.nice.org.uk/guidance/ng201/chapter/Recommendations
- ✓ IT supports anti-D Ig management in pregnancy: https://www.shotuk.org/resources/current-resources/
- ✓ SHOT Bite No 2: Anti-D Ig Administration: https://www.shotuk.org/resources/current-resources/shot-bites/
- ✓ SHOT video Anti-D Ig and Immune anti-D (part 1 and part 2): https://www.shotuk.org/resources/current-resources/videos/
- ✓ SHOT definitions 2024: https://www.shotuk.org/reporting/