2022 Annual SHOT Report – Supplementary information

Chapter 8: Adverse Events Related to Anti-D Immunoglobulin (Ig)

Additional analysis and case studies not included in the main 2022 Annual SHOT Report.

Human factors

Not all reporters answered all questions in this section.

A review of the HFIT responses noted that 237/345 (68.7%) of reporters, where this question was answered, completed a formal investigation, an increase from 54.8% in 2021. In 218/345 (63.2%) cases, reporters stated that a human factors framework or model was used in the investigation process. The SHOT HFIT was used in 80 reports, and an in-house tool by 79 reports where this question was answered.

Scores between 3-5 assigned to individual staff factors were seen in 77/345 (22.3%) of cases where this question was answered, a reduction from 41.4% of cases in the 2021 Annual SHOT Report. Scores between 3 and 5 were less prominent for the contribution of workload and staff provision, 77/345 (22.3%), the environment, 31/345 (9.0%) and task, 74/345 (21.4%). Organisation pressures scored between 3-5 in 58/345 (16.8%) cases, gaps in skills and knowledge in 92/345 (26.7%) and poor written or verbal communication in 145/345 (42.0%). It is encouraging to see the increase in cases being formally investigated and reviewed and less emphasis placed on individual staff members. A human factors and systems-based approach supports identification of true causes of error and implementation of effective interventions to reduce risk of recurrence.

Anomalous D-types

Case 8.3: Anomalous D-type leading to omission

A mother's blood group from the booking blood sample was A D-positive. The blood sample taken at the routine 28-week appointment was weakly positive for D-type and so the sample was referred to the Blood Service for further testing. The Blood Service established that the mother had a partial D-type and advised that they should be treated as D-negative. This information was not entered into the electronic patient records in a timely manner and resulted in omission of anti-D Ig during pregnancy and at delivery.

Weak and partial D-types continue to provide challenges in appropriate management of anti-D Ig and RAADP. Weak D-types were implicated in 7 cases of inappropriate administration and 5 cases of partial D-type resulted in inappropriate omission of anti-D Ig in the 2022 data. Weak D-types may initially manifest as D-negative at booking, with samples taken later during pregnancy revealing weakly positive D-type, resulting in unnecessary administration of anti-D Ig to mothers who are actually D-positive. Partial D-types, on the other hand, may look D-positive and, if not

subjected to further testing, lead to omission of anti-D Ig for mothers who should be treated as D-negative. Weak and partial D-types may also account for apparent false positive results in cffDNA screening. Laboratories should ensure that there are effective processes in place to identify weak/partial D-types, including referral for confirmatory testing where appropriate, for mothers and babies. Transfusion analyser systems should be configured to flag anomalous D-typing results to users. Where data is transferred from legacy to new LIMS, attention should be paid to ensuring that this important information is easily visible in the new system.

Where the D-type is anomalous and has not been confirmed, there should be a clear process for communicating this both within the laboratory team and to the clinical users. This will help ensure appropriate management of the woman with anti-D Ig, in accordance with BSH guidelines until confirmation has been obtained.