Anti-D Immunoglobulin (Ig) Administration in Pregnancy

In order to prevent haemolytic disease of the foetus and newborn (HDFN) due to anti-D antibodies, all non-sensitised, D negative pregnant patients who are predicted to have a *RHD* positive foetus, or foetus D type is unknown, are offered Prophylactic anti-D immunoglobulin (Ig). Key points to note include:

- Pregnant patients who are confirmed to have immune (allo) anti-D do not need (or should not receive) anti-D Ig.
- Where the results of the cell free foetal DNA (cffDNA) screening test are available and show that the foetus/baby is D-negative, anti-D Ig does not need to be given (confirm that the cffDNA result relates to the current pregnancy [check against EDD]).
- Person administering anti-D Ig should confirm the patients's identity, discuss risk/benefits, gain informed consent and record in patient's notes. Confirm product dose and expiry date. Record anti-D Ig batch no and date in pts notes, and fate via BloodTrack Enquiry, or return completed tag to Transfusion Laboratory.
- The following potentially sensitising events (PSE) anti-D Ig should be administered as soon as possible and always within 72 hours of the event. If, exceptionally, this deadline has not been met some protection may be offered if anti-D Ig is given up to 10 days after the sensitising event. For list of potentially sensitising events in pregnancy see table over page.
- Each new sensitising event should be managed with a dose of anti-D Ig independent of previous or subsequent planned doses (including RAADP)
- In the event of continual uterine bleeding which is clinically judged to represent the same sensitising event, with no features suggestive of a new presentation or a significant change in pattern or severity of bleeding, a minimum dose of 500IU anti-D Ig should be given at 6 weekly intervals. Feto-maternal (FMH) screening should be performed every 2 weeks from 20 weeks onwards.
- Appropriate tests for FMH should be carried out for all D-negative, pregnant people who have had a PSE after 20 weeks of gestation and additional dose(s) of anti-D Ig should be administered as indicated.
- Routine Antenatal Anti-D Ig Prophylaxis (RAADP) is a separate entity for unidentified events through to delivery, and should be always be given at the appropriate time in the second trimester, even if the patient has already received one or more doses of anti-D Ig for PSE
- Following birth, ABO and Rh D typing should be performed on cord blood and if the baby is confirmed to be D positive, all D negative, previously non-sensitised patients should be offered at least 500 IU of anti-D Ig within 72 h following delivery (1500IU issued at CDDFT). Maternal samples should be tested for FMH and additional dose(s) given as guided by FMH tests.
- Autologous Cell Salvage (CS): FMH indicated and <u>minimum</u> dose of 1500IU given when foetus D type unknown or D positive. Additional dose(s) given as guided by FMH tests.
- In the event of an intrauterine death (IUD), where no sample can be obtained from the baby, an appropriate dose of prophylactic anti-D Ig should be administered to D negative, previously non-sensitised patients within 72 h of the diagnosis of IUD, irrespective of the time of subsequent delivery.
- Stock available at CDDFT: 500IU vials for use before 20 weeks gestation and 1500IU for use after 20 weeks gestation and post-delivery. Stocks of Anti-D immunoglobulin are available from the Blood Bank laboratory and should be given within 72 hours of a sensitising event.

Potentially Sensitising Events (PSEs) During Pregnancy (see list below)	
Amniocentesis, chorionic villus biopsy and cordocentesis Antepartum haemorrhage/Uterine (PV) bleeding in pregnancy External cephalic version Abdominal trauma (sharp/blunt, open/closed) Ectopic pregnancy Evacuation of molar pregnancy	Intrauterine death and stillbirth In-utero therapeutic interventions (transfusion, surgery, insertion of shunts, laser) Miscarriage, threatened miscarriage Therapeutic termination of pregnancy Delivery – normal, instrumental or Caesarean section Intra-operative cell salvage
Gestation / Indication	**Dose and Testing**
Gestation LESS than 12 weeks	
All surgically managed abortions, ectopic/molar pregnancies and miscarriages	Administer at least **500IU** anti-D Ig within 72 hours of event. A test for FMH is not required.
Medical abortions beyond 10 weeks	
Uterine bleeding that is repeated, heavy or associated with abdominal pain	
Gestation 12 to 20 weeks	
For any potentially sensitising event (PSE) including medical and surgical miscarriages, abortions and ectopic/molar pregnancies	
For continuous uterine bleeding (see key points above)	
Gestation 20 weeks to term	
For any potentially sensitising event (<u>irrespective</u> of whether RAADP has been, or is planned, to be given immediately)	Request a test for FMH (e.g. Kleihaurer test) and administer at least 500IU anti-D Ig within 72 hours of event (note **1500IU** issued at CDDFT).
If the test for FMH (e.g., Kleihauer Test) indicates that further anti-D Ig is required	Administer additional anti-D Ig following discussion with laboratory, adhere to follow up FMH testing requested by lab to ensure all foetal cells are cleared
Routine Antenatal Anti-D Prophylaxis (RAADP)	
CDDFT RAADP Programme ensures that all D negative pregnant people who are predicted to have an *RHD* Positive Foetus, or Foetus D status unknown, who have not been previously sensitised, will be offered RAADP with 1500 IU anti-D Ig at around 28 weeks - **<u>Irrespective</u> of whether anti-D Ig already given for PSE.**	Take a blood sample to confirm group and antibody screen before administer anti-D Ig – do not wait for results before administering. Administer **1500IU** anti-D Ig at **28 – 30 weeks.**
At delivery (or intrauterine death (IUD) > 20 weeks	
If the baby's group is confirmed as D-positive or baby's group is unknown OR If cord samples are not available following IUD	Request a test for FMH (e.g., Kleihauer test) Administer at least 500IU anti-D Ig within 72 hours of delivery (1500IU at CDDFT)
If the test for FMH (e.g. Kleihauer Test) indicates that further anti-D is required	Administer additional anti-D Ig following discussion with laboratory, adhere to follow up FMH testing requested by lab to ensure all foetal cells are cleared
Where intra-operative cell salvage has been used during Caesarean section in D-negative, previously non-sensitised individuals and where cord blood group is confirmed as D positive (or unknown) Clinicians must inform the transfusion laboratory if intra-operative cell salvage has been used to ensure that correct dose of anti-D Ig is issued. Foetal bleed volume needs to be ascertained by confirmatory methodologies e.g., flow cytometry.	Administer at least 1500 IU anti-D Ig following re-infusion of salvaged red cells Maternal sample should be taken for estimation of FMH (e.g., Kleihauer test) 30–45 min after reinfusion in case more anti-D Ig is indicated FMH testing is repeated 72hours after total dose has been given to ensure all foetal cells are cleared.
This aide-memoire is based on BSH Guidelines titled 'BCSH guideline for the use of anti-D immunoglobulin for the prevention of haemolytic disease of the fetus and newborn 2014'.NICE guidance documents can be found at: NG 126 (https://www.nice.org.uk/guidance/ng126/chapter/Recommendations#anti-d-rhesus-prophylaxis) and NG 140 (https://www.nice.org.uk/guidance/ng140/chapter/Recommendations#anti-d-prophylaxis),	