13.1 FETAL MATERNAL HAEMORRHAGE AND THE KLEIHAUER TEST

FETAL MATERNAL HAEMORRHAGE AND POST PARTUM COMPLICATIONS

THE KLEIHAUER TEST

FETAL MATERNAL HAEMORRHAGE AND POST PARTUM COMPLICATIONS

Prophylactic Rh D Immunoglobulin is indicated for Rh D Negative women with no pre-formed immune Anti-D in the following circumstances:

- Post delivery of a Rh D Positive baby or fetus.
- Post fetal death in utero (FDIU) when fetal blood group is unknown.
- Post amniocentesis, amnioreduction, insertion of fetal amniotic shunts.
- Post cordocentesis.
- Post chorionic villi sampling (CVS).
- Antepartum haemorrhage (APH).
- External cephalic version (ECV) performed or attempted.
- Threatened, incomplete, missed abortion or termination of pregnancy (TOP).
- Ectopic pregnancy.
- Blighted ovum.
- Hydatidiform mole.
- Any other situation where FMH may result e.g. abdominal trauma, concealed abruption, MVA, post-coital bleeding.
- Transfusion of Rh D Positive platelets.

Rh D Immunoglobulin should be given as soon as possible after the sensitising event, but always within 72 hours. A dose offered within 9-10 days may still provide some protection.

Recurrent Bleeding Episodes
There are currently no National Guidelines on the timing of Rh D Immunoglobulin doses where recurrent bleeding episodes continue.

In the FIRST TRIMESTER one dose of Rh D Immunoglobulin provides protection for 6 weeks up to and including 12 weeks gestation.

PLEASE NOTE. A subsequent miscarriage or pregnancy requiring instrumentation of the uterus will require an additional dose of Rh D Immunoglobulin irrespective of when the previous dose was given.

In the SECOND and THIRD TRIMESTERS one dose of Rh D Immunoglobulin should provide on-going protection for 72 hours provided the Kleihauer test remains Negative.
THE KLEIHAUER TEST
- Kleihauer tests are not required in the first trimester as one minidose of Rh D Immunoglobulin will be sufficient to cover all events.
- Following fetomaternal haemorrhage (FMH) or delivery, a Kleihauer Test performed on a maternal sample is used to assess the volume of FMH and determine if additional doses of prophylactic Rh D Immunoglobulin are required.
- Kleihauer samples must be taken prior to administration of Rh (D) Immunoglobulin, to assess the volume of FMH. The maternal samples for FMH estimation need to be taken when sufficient time has elapsed following a sensitizing event to allow fetal cells to be distributed within the maternal circulation, a minimum of 15 minutes.
- Post delivery the optimal time to collect is between 15 minutes – 2 hours following placental separation.
- To be valid, maternal specimens for FMH testing must be collected within 72 hours of a potential sensitising event or delivery.
- A standard full dose of Rh D Immunoglobulin (625 IU) is sufficient to destroy up to 6mL of packed fetal red cells.
- For FMH in excess of 6mL a repeat Kleihauer Test is required 48 hours after administration of Rh D Immunoglobulin to ensure effective prophylaxis.

URGENT KLEIHAUER REQUESTS
The Blood Bank routinely run a batch of Kleihauer tests once per day. The indications for an urgent Kleihauer test are rare. Such requests MUST be accompanied by a phone call from the ordering clinician. An urgent Kleihauer test should be ordered ONLY in the following situations:

- Significant maternal abdominal trauma
- Non immune fetal hydrops in association with an abnormally raised MCA PSV.
- Sinusoidal fetal heart trace in a non immunised woman.
- Decreased fetal movements after two consecutive non reactive CTGs and an inactive fetus on ultrasound. NOTE: If the first CTG shows a sinusoidal pattern a Kleihauer test can be requested immediately.

A Kleihauer test should NOT be requested in the setting of an antepartum haemorrhage in order to diagnose abruption. This is an inappropriate use of the test.

Also refer to WNHS Obstetrics & Gynaecology Clinical Guidelines Section A
1.9 Management of Women who have Rh D Negative Blood Group
  1.9.1 Blood group and antibody screening
  1.9.2 Kleihauer Test
  1.9.3 Rh D Immunoglobulin

REFERENCES
