

INTRAVENTRICULAR HAEMORRHAGE

Intraventricular haemorrhage (IVH) is the most common type of brain haemorrhage in babies. It is seen most frequently in premature babies but may occur in term infants.

What is a ventricle?

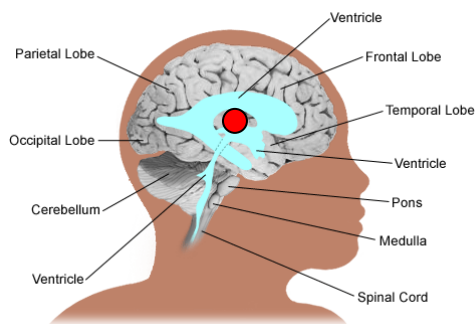
The ventricles are small cave-like structures deep inside the brain that produce the cerebrospinal fluid (CSF). CSF is distributed around the brain and along the spinal cord, and assists in protection of these structures.

Why does bleeding occur?

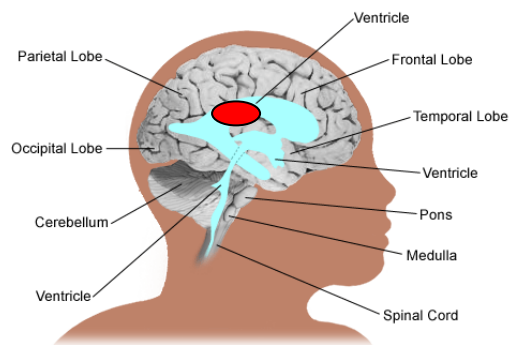
The germinal matrix is a small area of blood vessels near the ventricle. These blood vessels are fragile in the premature infant and can burst easily, allowing blood to enter the ventricle.

Are there different grades of bleeding?

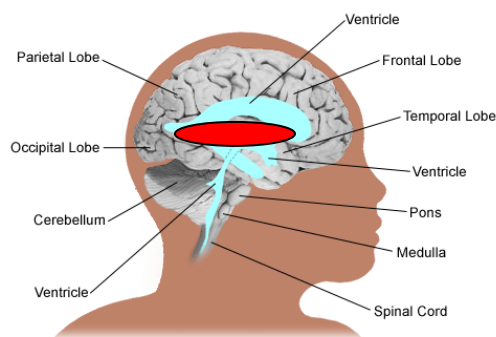
There are 4 grades of bleeds. These are depicted below.



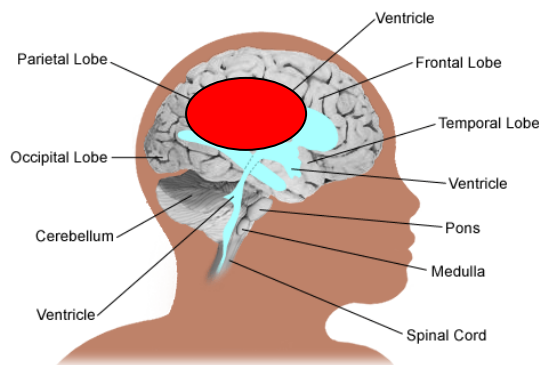
Grade I



Grade II



Grade III



Grade IV

http://www.schneiderchildrenshospital.org/peds_html_fixed/peds/hrnewborn/ivh.htm

fact sheet

Grade I – is a small bleed which occurs only within the germinal matrix (a small area) – these are also known as subependymal bleeds.

Grade II – is when blood spreads from the germinal matrix into the ventricle but there is no dilatation (enlargement) of the ventricle.

Grade III – is when more excessive bleeding occurs into the ventricle causing it to dilate (enlarge)

Grade IV – is where bleeding occurs in the brain substance itself. This is also called an intraparenchymal haemorrhage.

When do bleeds occur?

Nearly all bleeds occur within 72 hours after birth.

Which babies are at risk?

- Extremely premature babies, especially those born at 23-25 weeks gestation
- Infants who have been exposed to infection of the amniotic fluid (fluid surrounding the baby) while in the uterus
- Moderate-severe lung disease of prematurity (hyaline membrane disease [HMD]). This condition is described in another fact sheet and will be given to you if your baby has this condition
- Patent ductus arteriosus (PDA) – this condition is described in another fact sheet and will be given to you if your baby has this condition
- Pneumothorax (air leak) – this condition is described in another fact sheet and will be given to you if your baby has this condition.

How do we try to reduce the bleeds from happening?

Only two things have been shown to reduce the chances of a baby having a bleed:

- 1) treating the mother with steroids (celestone/dexamethasone) more than 24 hours before the baby is born if possible
- 2) treating HMD with surfactant

How do we diagnose them?

Cranial (head) ultrasounds (U/S) are performed through the anterior fontanelle (the soft spot on top of the head). U/S is painless and not harmful to the baby.

The U/S may be performed by the medical staff of the nursery in the first few days of life. A more detailed U/S is performed by the medical imaging department on a Tuesday or Thursday morning and an official report obtained.

U/S are performed in the first 2 weeks of life. If these are normal a repeat U/S is performed at 6 weeks of age, and again when the baby is close to their due date.

If a bleed has occurred an U/S may be performed more frequently, depending on the severity of the bleed.

Can IVH be treated?

There is no known treatment for IVH. Medications and surgery cannot cure the bleeding. Some complications of severe IVH can be treated.

Can an IVH cause brain injury?

For babies that do not have an IVH at all the outlook is very good for long term childhood development. However, for an extremely premature infant a normal U/S does not guarantee a normal outcome. For those babies who have a Grade I-II IVH there is probably no increased risk of problems with long term development in childhood. This is because the bleed has not involved the brain itself. For those babies that have a grade III or IV IVH there are risks of complications and an increased risk of problems with childhood development. If your infant has a grade III or IV IVH the medical staff will discuss with you the long term implications as well as treatment of any complications.

If you have any further questions please ask the medical and nursing staff.