



INTRAVENTRICULAR HAEMORRHAGES IVH

This fact sheet is to help your doctor explain a condition that your baby has. If there is anything you don't understand please ask more questions. If you need to find more information about this condition please use the references below.

What is IVH?

Intraventricular haemorrhage (IVH) is bleeding inside or around small fluid filled chambers in the brain called ventricles.

- "intraventricular" means within the ventricles
- "haemorrhage" means bleeding

IVH is common in premature babies, especially very low birthweight babies (i.e. babies with a birthweight less than 1500 grams). The precise cause is unclear.

IVH is divided into four grades which reflect severity:

Grade 1. This is a small bleed just on the surface of the ventricle.

Grade 2. This is a small amount of blood mixed in the fluid in the ventricle.

Grade 3. The ventricle contains a lot of blood and is also distended larger than its normal size.

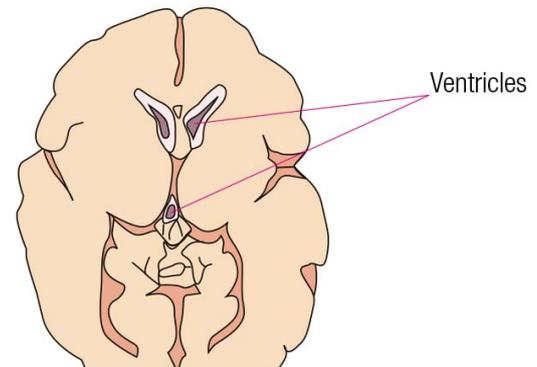
Grade 4. In addition to bleeding in the ventricle, there is involvement of the brain tissue adjacent to the ventricle.

IVH can occur on one or both sides of the brain. The grades of IVH can also be different on both sides of the brain.

Grade 1 and 2 are the most common (75 per cent of babies affected) and are rarely associated with any specific problems with later brain function.

Grade 3 and 4 may cause later problems with brain function in 30 to 50 per cent of cases. Later challenges are more likely if the ventricles become obstructed with blood clot and very dilated with fluid.

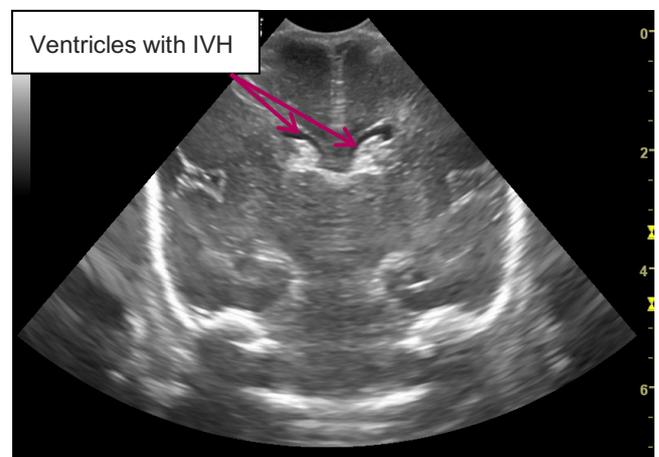
Intraventricular haemorrhages



How did you find IVH in my baby?

An IVH is usually found during an ultrasound examination of your baby's head. Your baby often does not show any sign of illness. The first ultrasound is usually done within the first three days after birth and then repeated after about one week. Routine ultrasound examinations occur throughout your baby's stay in the unit.

Ultrasound showing IVH on a baby's brain



How common is IVH

IVH is more common in more premature babies. Under 27 weeks, around one in four babies will have an IVH. Between 27 until 30 weeks, around one in ten babies will have an IVH. After 31 weeks, the risk decreases to one in one hundred babies.

Most babies (around 75%) will have a grade one or two IVH which are rarely associated with problems in later life.

What problems can IVH cause my baby?

Some IVH are associated with problems with brain function later in life. This may mean problems with either movement of the arms or legs, hearing, seeing, talking or thinking.

It is often difficult in the early days or from the ultrasound picture to be sure if your baby will have a problem or what the nature of the problem will be.

Is there any treatment for IVH?

There is no treatment for Grade 1 and 2 IVH. If there is enlargement of the ventricles in Grade 3 or 4 IVH which is usually due to obstruction of the ventricles by a blood clot, then there may be a need to relieve this obstruction. Your doctor can discuss the options that are available depending on what your baby needs at the time.

How will we know if my baby is going to have problems?

The doctors can tell you the overall chance of your baby having a problem if he or she has an IVH.

However, they will not be able to tell you whether your baby will definitely have a problem or not and they will not be able to forecast the exact nature of the problem.

Some problems may not be apparent for several months, therefore your baby will need long term follow-up after discharge home. This may be at the Women's or with your local area health service.

Associated conditions

In some babies the ultrasound will show other associated conditions.

A **periventricular echodensity** (otherwise called PVE) is an area in the brain, next to the ventricle, seen as bright on the ultrasound scan. It usually occurs on one side. It may represent bruising of the tissues. Some PVE resolve and leave no ultrasound evidence of brain injury and no problems with later brain function. Some PVE develop into small cysts in the brain (PVL).

Periventricular leukomalacia (otherwise called PVL) is not usually seen until the baby is about a month old. It is an area where small cysts have developed in the brain next to one of the ventricles. (see also the fact sheet Periventricular leukomalacia).

For more information

Your baby's doctor, nurse or care manager are available to answer your questions

Newborn Intensive Care Unit

Royal Women's Hospital
Cnr Flemington Rd and Grattan St
Parkville VIC 3052
T: (03) 8345 3400

Special Care Nursery

The Women's at Sandringham
193 Bluff Rd
Sandringham VIC 3191
T: (03) 9076 1572

Recommended websites

- Medline Plus
Entry in Medical Encyclopedia - medlineplus.gov/ency/article/007301.htm
Enter condition into Medline Plus search function for a list of relevant links
- Children's Hospitals and Clinics of Minnesota
www.childrensmn.org/educationmaterials/

Reference

Volpe JJ. Neurology of the Newborn 6th edn. 2017