

## Haemorrhagic Disease of Newborn, is it VKDB?

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HDN indeed doesn't happen only because of vitamin k deficiency, but VKDB is the commonest cause of it, HDN can be inherited or acquired.

It is a bleeding disorder, that occurs in a baby during the first few days of life. Babies are born with low levels of vitamin k, which is an essential factor in blood clotting. It is needed to form blood clots and to stop bleeding, its deficiency can lead to a serious bleeding problem known as (VKDB). Hemorrhagic disease of the newborn can lead to intracranial haemorrhage that can lead to death.

VKDB is associated with significant morbidity and mortality.

Most common causes of bleeding in the neonate: Platelet disorders, neonatal haemophilia and other congenital clotting factor deficiencies, vitamin K deficiency syndromes, liver failure, and disseminated intravascular coagulation.

### Types of VKDB in newborns

Based on the timing of initial bleeding after birth, this disease can be classified into the following three categories:

- **Early onset VKDB:** This type of vitamin k deficiency bleeding can have severe complications. It occurs within the first 24 hours of the baby's life and is usually seen in cases where the mother is taking anticonvulsant or anti-tuberculosis medication.
- **Classic onset VKDB:** It starts usually after the first day after birth and may be present as late as the first week after birth. This condition is seen in infants who do not receive prophylactic vitamin k at birth. VKDB bleeding typically occurs in the nose, skin, gastrointestinal tract and umbilicus. Bleeding in the brain is not very common in this condition.
- **Late-onset VKDB:** The late hemorrhagic disease in a newborn occurs between the second and the twelfth week after birth. However, it may happen up to six months after birth. This condition is common in infants who do not receive vitamin k prophylaxis in sufficient quantities at birth.

The HDN can happen to a newborn if there are certain situations arise:

- Preterm delivery.
- Forceps or vacuum extraction delivery.
- Low birth weight.

- Undetected liver diseases.
- Use of anticonvulsants, antibiotics, and any other alien type of medicines by mother during pregnancy and breastfeeding.
- Too much fast and prolonged labor, especially during pushing phase.
- Delivered by C-section.

### Symptoms:

- Blood in stool.
- Blood in urine.
- Nasal bleeding.
- Lumps on the head.
- Umbilical bleeding.
- Bleeding mucus membranes.
- Bruising.
- Seizures, if intracranial bleeding.
- vomiting with blood in the vomit at times.
- Pallor in the skin and gums.
- Bleeding in the penis if there has been a circumcision.
- Bleeding from prick sites.

### Diagnosis

PT (Prothrombin time) is the time taken for the blood to clot and is used to determine the presence of the disease.

Ultrasound or MRI can also be used to identify a case of internal bleeding.

### Treatment

In case the diagnosis is established, the baby will be given a vitamin k shot right away to increase the clotting ability of the blood immediately. The baby may also be given an oral dosage of vitamin k instead of injections. A blood transfusion may be required for babies who have experienced severe bleeding.

### Complications:

- Brain damage because of bleeding inside the skull.
- Blood loss in the baby and anaemia.
- Vomiting and a feeling of discomfort.
- Seizures.
- Death.

### About vitamin K shot

- It contains low quantities of benzyl alcohol which is found to be safe for infants.
- The only source of nutrition for the baby during early days is the mother's milk, which does not contain sufficient vitamin K. This makes a vitamin K shot a necessity.

### Prevention

Haemorrhagic disease can be prevented by using the following ways:

- A shot of vitamin K given to the baby right after birth is sufficient to prevent this condition.
- An oral administration of vitamin K to the infant can also prevent the condition.

### A mis-concept

- There is a growing trend among new parents that they are reluctant about giving vitamin k shots to their new-born baby, this practice is spreading rapidly, but vitamin k is necessary for babies.

### Why parents refuse it?

- Parents often refuse to go for any vaccines to their newborn as they don't want to make them get the pain of an I.M injection, that they think it may cause psycho-emotional damage and also a trauma to the little one.
- Vitamin k contains certain preservatives which can be toxic to the delicate immunity system of your new baby.
- The newborn baby is prone to infections. Vitamin k shots often aggravate the situation of getting infected because of their poor immunity system.

### Conclusion

Hemorrhagic disorder of the newborn is bleeding in a newborn due to any reason, the commonest among all reasons is VKDB. Other causes can be trauma, clotting factor deficiency, etc. Vitamin k is a fat-soluble vitamin mainly synthesized in adults by gut bacteria. Newborns however, have minimal vitamin k reserves in their liver during the time of delivery and are not able to synthesize vitamin k due to a sterile gut, so they are at risk of developing the hemorrhagic disease of the newborn. The prevention is easy by giving a vitamin K shot after birth.

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