Prematurity, Complications

The following are some of the problems the premature infant may encounter. Not all premature infants will develop these problems and some of them will have none of them.

ANEMIA

What is anemia? Anemia is a shortage of red blood cell. Red blood cells carry oxygen to the body tissues. Anemia results from the short life of red blood cells in an infant, and a preemie's delayed process of making new ones.

Is anemia dangerous? If left untreated, anemia can lead to poor weight gain and growth, decreased activity, increased heart rate, and developmental delays. Babies suffering from anemia at 8 months of age have been found to perform poorly on developmental tests, particularly those assessing motor skills.

How is anemia treated? Anemia does not always need to be treated if it is not severe and if the baby is not sick or having frequent laboratory tests. If treatment is necessary, it's usually done through transfusions of red blood cells obtained from a blood bank. Anemia can also be treated with a drug similar to the substance the body normally produces to increase the number of red blood cells. As the baby grows, he may need an additional source of iron to speed up the production of red blood cells.

APNEA

What is apnea? Apnea is a common health problem in premature babies. Spells of apnea may involve a pause in breathing, a decrease in heart rate, or a change in skin color. Apnea is caused by immaturity in the area of the brain that controls breathing. Almost all babies born at 30 weeks or less will experience apnea. These spells become less frequent with age. They usually disappear by time the baby nears his due date.

Is apnea dangerous? Although highly unlikely, apnea could lead to a low blood oxygen content, which in turn could cause brain damage. Apnea can also cause strain on a baby's heart and lungs. Despite past fears, a newborn's apnea does not increase their risk of SIDS.

How is apnea treated? Treating apnea can be as simple as gently stimulating the infant to restart breathing. However, when apnea occurs frequently, the infant may require medication, a ventilator, or a nasal device that blows a steady stream of air into her airways.

BLOOD SUGAR ABNORMALITIES

What causes blood sugar abnormalities? A newborn preemie's blood sugar may be either too low or too high. Low blood sugar is common soon after birth. High blood sugar is more common in babies who are getting most or all of their nutrition intravenously.

Are blood sugar abnormalities dangerous? If left untreated for a number of years, blood sugar fluctuations can lead to serious problems in baby's eyes, kidneys, nerves, gums and teeth, and blood vessels. However, once a baby is feeding regularly, blood sugar problems seldom recur. Blood sugar fluctuations in preemies do not indicate the development of diabetes later in life.

How are blood sugar abnormalities treated? Low blood sugar is treated by increasing baby's sugar intake, either by sugar water through an IV or by more frequent feedings. High blood sugar is treated by decreasing the sugar in IV fluids or by providing the baby with insulin.

FEEDING PROBLEMS

What causes feeding problems? Premature babies are often unable to coordinate their sucking and breathing. This can lead to breathing difficulties when they try to feed through breast or bottle. A healthy sucking and breathing coordination usually forms at around 34 weeks after gestation. This allows a baby to begin breastfeeding or bottle feeding normally.

Are feeding problems dangerous? If a baby is unable to feed through sucking, the problem is recognized quickly and the baby is fed nutrients in other ways. It is healthy and normal for a baby to lose weight in the first few weeks after birth, since newborns release water that was retained in the womb. Weight loss is not a sign of

malnutrition.
How are feeding problems treated? Babies who are unable to eat through sucking are fed nutrients through one of the following methods:

- Total Parenteral Nutrition (TPN), providing protein, fat, sugar, vitamins, and minerals intravenously (through a vein)
- Milk through a tube entering baby's nose or mouth
- Drip feedings passing directly into baby's intestines

INFECTIONS

What causes infections? There are two kinds of infections that preemies are susceptible to:

- Generalized infection (infection of the blood)
- Localized infections under the skin

Infections are a bigger threat to premature infants because they are less able than full-term infants to fight germs. Infections in babies can be caused by bacteria, viruses, or fungi, and can start before birth, near the time of birth, or while the baby is in the nursery.
Are infections dangerous? Most of the time the baby's infection responds rapidly to antibiotics and there are no long-term problems. Long-term problems are more likely if the baby has meningitis, or if he or she experiences severe low blood pressure for a long period of time.
How are infections treated? Bacterial infections can be treated with antibiotics. Other medications are prescribed to treat viral and fungal infections. Frequent hand washing by anyone who comes into contact with your baby will also reduce the risk of infection.

LOW BLOOD PRESSURE

What causes low blood pressure? Low blood pressure, or hypotension, is a relatively common complication that may occur shortly after birth. It refers to poor circulatory function which results in inadequate blood flow to the heart, brain, and other vital organs. In a newborn, low blood pressure can be due to infection, blood loss, fluid loss, or medications given to the mother before delivery.
Is low blood pressure dangerous? It's not dangerous if it's treated early. Low blood pressure can lessen the body's ability to circulate its nutrients and clean its wastes. It can also result in heart problems if left untreated.
How is low blood pressure treated? Low blood pressure is usually treated with medication or by increasing fluid intake intravenously. Infants with low blood pressure due to blood loss may be given a blood transfusion.

PATENT DUCTUS ARTERIOSUS

What is patent ductus arteriosus (PDA)? The ductus is a blood vessel connecting the main vessel leading to the lungs (pulmonary artery) to the main vessel of the body (aorta). Its function in the unborn baby is to allow blood to bypass the lungs, since oxygen for the blood comes from the mother and not from breathing air. Normally after birth the ductus gradually narrows and then closes in the first few hours to days, but in premature infants, this blood vessel may stay open.
Is patent ductus arteriosus dangerous? The opening of this blood vessel causes too much blood to be pumped into the baby's lungs. This leads to an increase in fluid in the lungs and it makes it harder for the baby to breathe. PDA also increases the work of the heart and can lead to lung failure.
How is patent ductus arteriosus treated? If the ductus is very small and there is only a tiny amount of blood flowing through it, the doctors may wait to see if it closes on its own. Treatment methods in more severe cases involve giving medications and decreasing baby's fluid intake. If all else fails, then surgery may be required to close the ductus.

RESPIRATORY DISTRESS SYNDROME (RDS)

Although there are many causes of breathing difficulties in premature infants, the most common one is RDS. RDS happens when the infant's immature lungs do not produce enough of an important substance called surfactant. A healthy amount of surfactant spreads like a film over the tiny air sacs of the lungs, allowing them

to stay open. Open air sacs are essential for oxygen to enter the blood from the lungs and for carbon dioxide to be released from the blood into the lungs for exhalation (breathing out).

Is RDS dangerous? Some possible long-term problems may come from RDS. If the case is severe or if there have been complications, possible problems may include:

- Increased severity of colds or other respiratory infections
- Sensitivity to lung irritants such as smoke and pollution
- Infection of the bloodstream
- Bleeding in the brain
- Lung scarring
- Greater likelihood of wheezing or other asthma-like problems

How is RDS treated? A baby with RDS will need extra oxygen. The added oxygen might be given by placing a plastic hood over the baby's head or through little tubes in the nostrils. If the RDS is moderate or severe, your baby may need to have a breathing tube inserted into her wind pipe. She may also be given an artificial form of surfactant, replacing the substance that her lungs lack.

RETINOPATHY OF PREMATURITY

What is retinopathy of prematurity (ROP)? This complication is abnormal growth of the blood vessels in an infant's eye. The development of blood vessels in the eye is completed just a few weeks before the normal time of delivery. In premature babies this process is not complete.

Is ROP dangerous? ROP can have long-term effects on a baby's vision. Premature infants more frequently need glasses in early childhood than children who were not premature. A baby with ROP is also more likely than most children to develop a "lazy" eye or wandering eye. Severe ROP can lead to blindness.

How is ROP treated? Most cases of ROP do not require any treatment; they resolve on their own. In severe cases, the ends of the vessels in the inner lining of the eye will be treated to prevent further abnormal growth.

TRANSIENT TACHYPNEA

What is transient tachypnea? Transient tachypnea is rapid breathing due to slow re-absorption of fetal lung fluid. In the womb, a baby's lungs continuously make fluid. Some of this fluid is squeezed out as the baby comes down the birth canal. The rest must be absorbed by the baby's tissues during the first minutes to hours of life.

Is transient tachypnea dangerous? No. The breathing abnormalities may last hours or days, but should disappear on their own and will not present long-term problems.

How is transient tachypnea treated? A baby with transient tachypnea will have his or her respiration, heart rate, and oxygenation watched closely. Some babies may also need additional oxygen to be given through a hood or a small tube inserted in baby's nose, which can help keep the fluid out of the lungs' air sacs and speed up its reabsorption.

If your baby develops any of the above problems, your caregiver will go over these problems with you and help you understand them. Ask questions about anything you are unsure of.

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