

# RISK FOR INFECTION IN THE LATE PRETERM INFANT

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Late preterm infants are at greater risk of having an infection caused by bacteria. An infection in the uterine environment is sometimes the reason for early labor or delivery. Because of this concern, late preterm infants will often be tested for a bacterial infection, and sometimes, they will receive antibiotics until the test results are determined.

During pregnancy, late preterm infants receive some antibodies across the placenta from their mother to help fight infections. However, they have not acquired as many antibodies as a term infant. Thus, it is important for care providers and families to practice good hand hygiene to decrease the chance that a late preterm infant acquires an infection.

## **Evaluation for an Infection**

Because a bacterial infection in the placenta or the amniotic sac (called *chorioamnionitis*) can lead to early labor, late preterm infants are often evaluated for infection. After a late preterm infant is born, the hospital staff will decide if an infant needs to be evaluated and/or treated for an infection. The baby's doctor will look at whether the mother had signs of an infection before the baby was born, such as:

- Leakage of amniotic fluid before labor starts (also known as *premature rupture of membranes*),

- Blood tests that suggest an infection (i.e., high white blood cell count in the mother),
- Abdominal pain that indicates that the uterus is tender, or
- A high fever in the mother.

The baby's doctor will also assess for signs of an infection in the baby, including:

- An increase in the baby's heart rate before birth,
- Low glucose levels in the baby's blood,
- A low temperature,
- A fever,
- Pauses in breathing,
- Breathing difficulties,
- Decreased activity, or
- Low blood pressure.

The term *sepsis* is often used to describe a baby who is extremely sick with many of these signs of infection.

If a mother or baby has one or more of these signs, the baby may or may not have an infection. To help decide if a baby has an infection, the doctors may order some blood tests. Some possible blood tests that can be sent are:

- White blood cell count,
- Differential (types of white blood cells),
- Platelet count,
- C-reactive protein (CRP), which is a marker of inflammation, and
- *Blood culture.*

Infants with a bacterial infection in the blood may have a low white blood cell count, many immature white blood cells, a low platelet count, an elevated CRP, or a positive blood culture. Most late preterm infants have normal test results and do not have an infection.

The blood culture is the best test to assess for an infection. In this test, a small amount of blood from a baby is placed on a culture plate. If bacteria are present in the infant's blood, bacteria will grow on the plate within 48 hours. The hospital laboratory can then determine which antibiotics are best at treating the specific bacteria.

If the blood culture does not grow bacteria, the infant can still have an infection. This is possible if the infant has already been exposed to antibiotics given to the mother during labor or if the amount of bacteria in the infant's blood is small.

### **Treatment for a Possible Infection**

If an infant has a large number of clinical signs that suggest a possible infection, the infant will be treated with antibiotics. The infant usually receives 2 types of antibiotics through a catheter inserted into the baby's vein, called an *intravenous catheter* or IV catheter. Babies with IV catheters can still be held and fed by their parents. Depending on the antibiotics, repeat doses will be given every 6, 8, 12, or 24 hours. Some hospitals require an infant to be in the SCN or NICU while receiving antibiotics. Other hospitals have the ability to treat infants for an infection in the Newborn Nursery or Postpartum Room. If the infant does not have any

medical concerns and the blood culture results are negative, the antibiotics are usually stopped after 48 hours.

If an infant has medical issues and there is a high concern for infection, the infant is usually treated for at least one week with IV antibiotics. This antibiotic treatment may occur even if the blood culture does not reveal a specific bacteria.

If the blood culture does identify bacteria, the infant will need to be treated with antibiotics for at least one week. This treatment will occur even if the infant appears well. The type of antibiotics may be changed based on the laboratory testing. Sometimes bacteria from the infant's skin will grow in the blood culture. In this case, the infant will not need to be treated but a repeat blood culture will need to be obtained.

When an infant is treated for an infection with at least 1 week of antibiotics, further testing is needed before the antibiotics can be stopped. The following tests may be done:

1. A repeat blood culture to make sure that the bacteria has been cleared from the infant's bloodstream.
2. Repeat testing of the white blood cell count, types of white blood cells, platelet count, and CRP if any of these tests were initially abnormal. If a baby has a low platelet count, he/she may be given a platelet transfusion by a catheter in the infant's vein.
3. A spinal tap, also known as a *lumbar puncture*, to determine if any bacteria from the infant's blood moved into the spinal fluid. If the spinal fluid has a high white

blood cell count or bacteria are identified in the culture, the infant will need to be treated with antibiotics for a longer period of time.

## **Preventing Infections**

Late preterm infants are at greater risk of acquiring an infection compared with term infants because they have not received as many protective antibodies during gestation to fight bacterial and viral infections. Thus, it is important that hospital staff and family members take measures to help prevent the spread of infection. Everyone should wash their hands or use a hand sanitizer before touching or holding a late preterm baby.

Family or friends who have a fever or cold should hold off on visiting a baby in the hospital until they are well. If a parent or care provider has a cold, he/she can still visit but should be extra careful with hand washing. Sick parents who are sneezing or coughing can also wear a mask covering their mouth and nose when they are holding or feeding their baby. Young children with a cough or cold should not visit the hospital during their illness.

Even if a family member follows all of these precautions, an infant can still get sick. Infants and families can be protected from infections by receiving immunizations (see Transition to Home Chapter). Fortunately, most late preterm infants will be able to fight an infection on their own.

## **Conclusion**

Late preterm infants are often evaluated and sometimes treated for a possible bacterial infection soon after birth. Most late preterm infants do not actually have an infection but many may be treated with antibiotics until the blood tests show that the baby does not have an infection. In the hospital and at home, it is important that parents and caregivers practice good hand hygiene to prevent a late preterm infant from getting an infection.