CONDITION

Group B streptococcal infections in newborns

Group B streptococcal infection is a bacterial infection that can cause sepsis, pneumonia, or meningitis in newborn babies.

WHAT IT IS
Serious bacterial infection affecting newborn babies

BODY SYSTEM
Blood, lungs, brain, and spinal cord

MAIN SYMPTOMS
Poor feeding, unusual sleepiness, breathing difficulty, temperature changes

WHAT CAUSES IT
Infection with group B Streptococcus bacteria

HOW IT IS DIAGNOSED
Blood culture, sometimes spinal fluid culture

MAIN TREATMENT
Intravenous antibiotics and hospital supportive care

CAN IT BE CURED?
Yes - antibiotics can clear the infection

IS IT AN EMERGENCY?
Yes - any suspected infection in a newborn

LONG-TERM OUTLOOK
Often full recovery; meningitis may cause lasting disability

Overview

Group B streptococcal infection is caused by a bacterium called Streptococcus agalactiae , usually shortened to group B strep or GBS. It can infect a newborn's blood, lungs, or the tissues surrounding the brain and spinal cord.

Many healthy adults carry GBS in the bowel or vagina without symptoms. This is called colonisation. It is not the same as having an active infection, and GBS is not usually considered a sexually transmitted infection.

A baby may come into contact with GBS around the time of birth. Only a small proportion of exposed babies develop an infection, but those who do can become unwell quickly. Prompt hospital assessment and antibiotics like amoxicillin or doxycycline are important.

Newborn GBS infections are grouped by when symptoms begin:

Early-onset infection often affects the blood or lungs. Late-onset infection is more likely than early-onset infection to involve the tissues around the brain and spinal cord, causing meningitis.

- Early-onset infection begins during the first 6 days of life, often within the first day
- Late-onset infection begins from 7 through 89 days of life

Symptoms

Symptoms in newborns can be subtle. A baby may not develop a high temperature, and early changes may look like ordinary sleepiness or feeding difficulty.

Possible symptoms include:

Early-onset GBS can cause sepsis , which is the body's dangerous response to infection. It may also cause pneumonia, an infection in the lungs.

Late-onset GBS may cause sepsis or meningitis. Meningitis is inflammation of the protective tissues around the brain and spinal cord. A newborn with meningitis may be difficult to wake, feed poorly, become very irritable, or have seizures.

These symptoms can have causes other than GBS. However, a newborn with possible signs of infection needs urgent medical assessment rather than observation at home.

- Feeding poorly or refusing feeds
- Being unusually sleepy, floppy, irritable, or difficult to wake
- Breathing rapidly, grunting, pausing between breaths, or working hard to breathe
- Blue, grey, pale, or blotchy skin
- A temperature of 38°C or higher, or an unusually low temperature
- Vomiting or a swollen abdomen
- Fewer wet diapers
- A very fast or slow heart rate
- Jerking movements or seizures
- A tense or bulging soft spot on the head

Causes and risk factors

GBS bacteria commonly live in the digestive and genital tracts. Colonisation can come and go and usually causes no symptoms in the pregnant person.

Early-onset infection is usually linked to exposure before or during birth. The bacteria may move upward after the membranes have ruptured, or the baby may encounter them while passing through the vagina.

Factors linked with a higher chance of early-onset GBS infection include:

A positive pregnancy GBS test does not mean the baby will become infected. It helps the maternity team decide whether antibiotics during labour may lower the baby's risk.

Late-onset infection can follow exposure to GBS from a parent or another source after birth. In many cases, it is not possible to identify exactly where the bacteria came from. Antibiotics given during labour reduce early-onset infections but do not reliably prevent late-onset infections.

Premature babies may be more vulnerable because their immune systems are less mature. Late-onset infection can also occur in full-term babies without an obvious risk factor.

- GBS found during the current pregnancy
- GBS bacteria found in urine during pregnancy
- A previous baby who had an invasive GBS infection
- Birth before 37 weeks of pregnancy
- A long interval between the waters breaking and birth
- Fever during labour
- Infection of the membranes and fluid around the baby

Diagnosis

A pregnancy screening result cannot diagnose infection in a baby. Diagnosis requires an assessment of the baby and laboratory tests.

Doctors usually take a small blood sample for a blood culture . A culture allows the laboratory to check whether bacteria grow from the sample. Finding GBS in blood confirms an invasive infection.

If meningitis is possible, the baby may need a lumbar puncture . During this procedure, a small sample of the fluid surrounding the brain and spinal cord is taken from the lower back. This fluid is tested for bacteria and signs of inflammation. The procedure may be delayed if the baby first needs help with breathing or circulation.

Other tests may include blood counts, inflammation markers, oxygen measurements, and a chest X-ray. These can show how unwell the baby is or whether the lungs are affected, but they do not confirm GBS by themselves.

Treatment may begin before culture results are available. Waiting for confirmation could be unsafe when a newborn has signs of a serious bacterial infection.

Treatment and management

A newborn with suspected GBS infection is treated in hospital. Antibiotics are given into a vein so they reach the bloodstream quickly.

At first, doctors usually use antibiotics that cover GBS and other bacteria that can cause newborn infections. Treatment can then be adjusted when culture and antibiotic-sensitivity results are available. The length of treatment is influenced by whether the infection involves the blood, lungs, or tissues around the brain.

Some babies need care in a neonatal unit. Supportive treatment may include:

Not every well baby who was exposed to GBS needs antibiotics. The maternity or newborn team may recommend observation, tests, or treatment based on the baby's symptoms, gestational age, birth circumstances, and antibiotics given during labour.

Parents can usually remain involved in feeding, comforting, and caring for their baby as the baby's condition allows. The hospital team can explain whether breastfeeding, expressed milk, or temporary feeding support is appropriate.

- Oxygen or breathing support
- Fluids and nutrition through a vein or feeding tube
- Treatment to support blood pressure and circulation
- Medicines to control seizures
- Careful monitoring of temperature, blood sugar, urine output, and oxygen levels

Complications

Many babies recover after prompt treatment. Complications are more likely when infection is severe, treatment is delayed, or meningitis develops.

Sepsis can interfere with blood flow and affect organs such as the lungs, kidneys, heart, or brain. Some babies need intensive care while the infection is brought under control.

Meningitis can sometimes lead to longer-term effects, including:

Not every baby who has GBS meningitis develops these problems. Follow-up checks help identify changes early so that support can begin when needed.

Despite treatment, severe GBS infection can be fatal. This is why possible infection in a newborn is treated as urgent even when the first symptoms seem mild.

- Hearing loss
- Vision problems
- Seizures
- Delayed movement, learning, or communication
- Problems with muscle control
- Other developmental disabilities

Prevention

GBS colonisation itself cannot always be prevented. It is common, often temporary, and is not caused by poor hygiene. Washing inside the vagina, taking unneeded antibiotics, or using home remedies does not reliably prevent a newborn infection and may cause harm.

Prevention policies differ between countries. In the United States, routine GBS screening is generally performed late in pregnancy. Some other health systems use risk factors during pregnancy and labour rather than screening everyone.

When GBS is found, antibiotics given through a vein during labour can greatly lower the chance of early-onset infection. Antibiotics taken earlier in pregnancy do not usually remove colonisation permanently, although a urinary infection caused by GBS may need treatment at the time it is found.

A planned caesarean birth before labour begins and before the membranes rupture has a very low risk of early-onset GBS transmission. If labour begins or the waters break before the operation, the maternity team considers the GBS result and other circumstances.

Antibiotics during labour do not prevent every early-onset infection, and they do not reliably prevent late-onset infection. There is currently no routinely available GBS vaccine.

Parents cannot cause GBS infection by cuddling or caring for their baby. Normal handwashing is sensible, especially before handling a premature or medically vulnerable newborn, but late-onset GBS cannot always be prevented.

Living with it and what to expect

Treatment takes place over days or, for infections such as meningitis, sometimes longer. Doctors monitor the baby's breathing, feeding, circulation, and response to antibiotics. Culture results help clarify the cause and guide the rest of treatment.

Many babies improve as the infection clears and later go home without ongoing medical needs. Feeding and energy may take time to return to normal after a serious illness or intensive care stay.

Follow-up depends on the type and severity of infection. After meningitis or another severe infection, a baby may need hearing checks and developmental reviews. These look at movement, vision, communication, learning, and growth over the following months and years.

Some developmental differences are not clear during the newborn period. Attending recommended follow-up appointments gives the care team a chance to identify concerns and arrange early support. This does not mean that problems are expected in every child.

A previous newborn GBS infection does not usually mean the child will continue to carry an active infection. Recurrence can occur, however, so new symptoms of illness still require prompt assessment.

For a future pregnancy, tell the maternity team if a previous baby had invasive GBS infection. This history can affect plans for antibiotics during labour.

When to get medical help

Possible infection in a newborn is not suitable for a routine appointment. Seek urgent medical assessment if a baby younger than 3 months has a temperature of 38°C or higher, an unusually low temperature, poor feeding, marked sleepiness, unusual irritability, or a clear change from their normal behaviour.

Call emergency services immediately if the baby:

Do not wait for every symptom to appear. Newborns may have serious infections without a fever.

After recovery, routine follow-up is different from emergency care. Keep scheduled hearing, newborn, and developmental appointments. Contact the child's usual healthcare professional if feeding, growth, hearing, movement, or development causes concern but the child is otherwise well.

- Is struggling to breathe, grunting, or having pauses in breathing

- Has blue, grey, very pale, or blotchy skin
- Is floppy, unresponsive, or very difficult to wake
- Has a seizure
- Appears to be getting worse quickly

Common questions

Is a positive GBS test in pregnancy the same as my baby having GBS infection?

No. A positive test usually means GBS bacteria are present without causing illness in the pregnant person. Most exposed babies do not develop an infection. The result is used to plan steps that reduce the baby's risk around birth.

Can a baby still get GBS after antibiotics during labour?

Yes. Antibiotics during labour lower the chance of early-onset infection but cannot remove the risk completely. They do not reliably prevent late-onset infection, which can appear from 7 through 89 days after birth.

Is newborn GBS contagious?

GBS can pass from one person to another, but it does not usually spread like a cold or flu. Many adults carry it naturally. Families do not normally need to isolate from a baby with GBS, although hospitals use appropriate infection-control measures and good hand hygiene remains important.

Can my baby get GBS if I have a caesarean birth?

The risk is very low when a planned caesarean takes place before labour and before the waters break. If labour has started or the membranes have ruptured, the baby may already have been exposed, so the maternity team considers whether GBS prevention is needed.

Will my baby have long-term problems?

Many babies recover fully. The risk of lasting effects is greater after meningitis or severe sepsis. Hearing and developmental follow-up can identify problems that may not be obvious immediately after discharge.

Can I breastfeed after my baby has had GBS?

Breastfeeding can usually continue if the baby is well enough to feed. Expressed milk or temporary feeding support may be used during intensive treatment. GBS infection is not normally a reason to stop breastfeeding, but the hospital team may give specific advice in unusual circumstances.

Sources

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