

STREPTOCOCCUS GROUP B AND RISKS IN CHILDBIRTH

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Annotation: This article discusses the microbiological characteristics of Group B Streptococcus (GBS), its risks during pregnancy and childbirth, mechanisms of vertical transmission, neonatal complications, and evidence-based preventive measures. Modern diagnostic approaches and intrapartum antibiotic prophylaxis standards are highlighted.

Keywords: Group B Streptococcus, GBS, neonatal infection, meningitis, perinatal risk, prevention.

MAIN SECTION.

General information about group B streptococcus: Researchers have studied the bacterial determinants of invasive disease caused by GBS during pregnancy, observing the process of GBS ascending from colonized vaginal tracts to the uterus and through the placenta.

Group B streptococcus is an opportunistic bacterium that often lives in the large intestine and vagina in humans.

20–30% of women are natural carriers (colonization). Colonization during pregnancy is dangerous because it can be transmitted to the baby during childbirth. Group B streptococcus (*Streptococcus agalactiae*) is a gram-positive, chain-shaped, facultative anaerobic bacterium that is part of the normal microflora of the human gastrointestinal tract and genitourinary system. In some women, it is present as vaginal colonization without causing any symptoms.

Center for the development and location of GBS.

Main reservoir: intestinal flora.

Vagina usually: Vaginal epithelium.

The perineal area is located in the anorectal area. Therefore, screening is performed from a vaginal + rectal swab.

Risk factors in pregnant women: GBS usually does not harm the woman, but the baby is exposed to the following risks during childbirth. Early-onset disease (EOGBS) — 0–6 days. This is the most dangerous period.

Bacteria at birth: Breathing can enter through the nose, eyes, skin, and umbilical cord.

Main diseases: Sepsis (blood infection), pneumonia, meningitis.

In case of meningitis, even those who survive may have: deafness, brain damage, and neurological delay.

Group B Streptococcus (GBS) infection can cause hearing loss, severe hearing loss, or deafness, but this is very rare and occurs mainly in newborns.

Neonatal period: In this review, we summarize the data on GBS infections in newborns, their epidemiology, the consequences of invasive disease, and how GBS spreads in the infant.

We also highlight the virulence factors that are important in GBS invasion and damage to target organs in the infant (lungs, intestines, brain).

In newborns, GBS meningitis (inflammation of the meninges) can damage the auditory nerve and inner ear structures.

Pathogenesis of GBS and interaction with the infant immune system: GBS takes advantage of the weakened immune defenses of the newborn and allows the infection to spread through the lungs, intestines, and brain. The development of invasive GBS disease is directly related to the ability of the bacteria to overcome the host (mother or infant) defenses.

Animal models—particularly those that accurately reflect mother-to-infant transmission of GBS and infant acquisition of the pathogen—have been crucial in understanding how GBS exploits the vulnerability of neonatal immunity.

20–30% of children with GBS meningitis may develop some degree of hearing loss or complete deafness.

This is mainly associated with late-onset GBS (7 days to 3 months after birth).

Conclusion: Group B Streptococcus (GBS) is present as a colony in 15-40% of pregnant women and is often asymptomatic. However, GBS can be transmitted to the baby during childbirth. As a result, early neonatal infections develop. GBS also poses a risk to the mother during pregnancy. The likelihood of urinary tract infections, chorioamnionitis, and preterm labor increases. Therefore, perinatal screening and prophylaxis with intravenous antibiotics during labor when GBS is detected significantly reduces the risk to the baby and mother.

Recommendations for women: Regular medical check-ups during pregnancy, GBS screening tests, adherence to hygiene rules, and antibiotic prophylaxis according to doctor's recommendations - prevent the risks associated with GBS and ensure the development of a healthy mother and child in society. If the mother is healthy, the future generation growing in her arms will also be healthy.

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