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# GONOCOCCAL INFECTIONS AND GENITAL MICROBIOTA DISORDERS IN GIRLS: CLINICAL FEATURES, DIAGNOSIS, AND PREVENTION

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### Abstract

Sexually transmitted infections (STIs) are a significant public health concern affecting the reproductive health of women. This article analyzes gonococcal infections in girls and young women, specifically gonorrhea, gonoblenorrhoea, and gonococcal proctitis, as well as genital microbiota disorders such as bacterial vaginosis, mycoplasmosis, and ureaplasmosis. The etiology, pathogenesis, clinical features, and preventive measures are reviewed. Modern diagnostic methods enable early detection of these infections. The results highlight the importance of timely diagnosis and treatment to preserve reproductive health.

**Keywords:** Gonorrhoea, gonoblenorrhoea, bacterial vaginosis, mycoplasmosis, ureaplasmosis, reproductive health, sexually transmitted infections.

### Introduction

Sexually transmitted infections (STIs) remain a pressing concern in modern medicine. According to the World Health Organization, millions of new STI cases are reported annually, with a significant proportion affecting women of reproductive age [1,2]. Gonorrhoea is among the most prevalent STIs, caused by *Neisseria gonorrhoeae*, a Gram-negative diplococcus that primarily infects the mucous membranes of the urogenital tract [3,4].

Gonococcal infections can affect not only the genital organs but also the rectum, pharynx, and ocular conjunctiva. During childbirth, infection can be transmitted from mother to neonate, resulting in severe conjunctival inflammation known as gonoblenorrhoea. Additionally, genital microbiota disturbances, including bacterial vaginosis, mycoplasmosis, and ureaplasmosis, can adversely affect women's reproductive health by promoting chronic inflammation, pregnancy complications, and infertility [5–9].

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The aim of this study is to analyze the clinical features, diagnostic methods, and preventive strategies for gonococcal infections and genital microbiota disorders in girls and young women, based on current scientific evidence.

### Methods

This study involved a comprehensive review of recent scientific literature in gynecology and infectious diseases. Sources included international clinical guidelines, monographs, and recently published research articles [1–10]. Data were analyzed regarding the etiology, pathogenesis, clinical presentation, and diagnostic methods of gonococcal infections. Diagnostic approaches reviewed included microbiological examination, bacterial culture, and molecular diagnostics (PCR). The clinical significance of pathogens associated with genital microbiota disorders was also examined [7–9,11–13].

### Results

The analysis indicated that gonococcal infections are primarily transmitted through sexual contact. In females, gonorrhoea often presents with mild or asymptomatic courses, complicating early diagnosis and increasing the risk of upper genital tract involvement [3,5,6].

The main clinical manifestations of gonorrhoea include vaginal purulent discharge, dysuria, and lower abdominal pain. Upper genital tract infection can lead to salpingitis and impaired reproductive function [5,6].

In neonates, gonococcal infection often manifests as gonoblenorrhoea, characterized by conjunctival redness, eyelid swelling, and purulent discharge. If untreated, corneal damage and visual impairment may occur [5,6,12].

Gonococcal proctitis involves inflammation of the rectal mucosa, with patients presenting anal pain, pruritus, and mucopurulent discharge [6,7].

Among genital microbiota disorders, bacterial vaginosis is common and results from disruption of vaginal flora balance. Lactobacilli normally predominate, but

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their reduction allows anaerobic bacteria to proliferate [7]. Mycoplasmosis and ureaplasmosis, caused by *Mycoplasma genitalium* and *Ureaplasma urealyticum* respectively, often present as subclinical infections, contributing to chronic inflammation [8,9].

### Routes of Infection and Epidemiology

Studies indicate that gonococcal infection in girls is primarily transmitted through sexual contact, although in rare cases, poor hygiene or hospital environments may contribute to infection [1,2,6]. Epidemiological data show that girls and women aged 15–24 years represent the highest risk group, highlighting the importance of targeted preventive strategies.

### Clinical Symptom Details

In females, gonorrhea often remains asymptomatic; however, some cases present with purulent vaginal discharge, dysuria, discomfort, and lower abdominal pain [5,6]. Gonococcal proctitis manifests with anal pain, pruritus, and mucopurulent discharge. Approximately 25–30% of patients with proctitis may remain asymptomatic [6,7], complicating early detection and treatment.

### Genital Microbiota Disorders and Prevalence

Bacterial vaginosis occurs in 20–30% of girls and results from disruption of normal vaginal flora balance. When lactobacilli decrease, anaerobic bacteria such as *Gardnerella vaginalis* and *Mobiluncus* spp. proliferate. *Mycoplasma genitalium* and *Ureaplasma urealyticum* infections are often subclinical but can contribute to chronic inflammation, dysmenorrhea, and infertility [8,9]. These microbiota disturbances underscore the importance of regular screening in reproductive-age girls.

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### Neonatal Gonoblenorrhoea

Infection can be transmitted from mother to neonate during delivery. The disease is characterized by severe conjunctival redness, eyelid swelling, and purulent discharge [5,12]. If untreated, corneal damage and visual impairment may develop, emphasizing the importance of early prophylactic measures, such as the instillation of antiseptic eye drops in neonates.

### Laboratory Diagnostic Findings

PCR testing allows detection of gonococcal infection with 95–98% accuracy. Microbiological culture and Gram staining can also identify *Neisseria gonorrhoeae*, though subclinical infections may yield negative results [3,6]. Modern molecular methods provide significant advantages in terms of sensitivity and speed of diagnosis.

### Treatment and Preventive Approaches

Antibiotic therapy remains highly effective; however, the prevalence of resistant *Neisseria gonorrhoeae* strains is increasing, necessitating regular updates of treatment protocols [4,6]. Preventive measures include personal hygiene, protected sexual intercourse, and prenatal screening [5,13]. Early identification and treatment of infected individuals are crucial to prevent complications and further transmission.

### Discussion

The findings confirm that gonococcal infections and genital microbiota disorders have a significant impact on female reproductive health. As many cases are asymptomatic, screening and modern laboratory diagnostics are essential for early detection [2,6,8].

Molecular diagnostic methods, especially PCR, provide high accuracy in identifying infections. Antibiotic resistance remains a critical challenge,

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necessitating regular updates of treatment protocols [4,12]. Preventive measures include personal hygiene, protected sexual intercourse, regular medical examinations, and prenatal screening. Neonatal prophylaxis for gonoblenorrhoea involves ocular instillation of antiseptic agents [5,12,13].

### Conclusion

Gonococcal infections and genital microbiota disorders pose major risks to female reproductive health. Often asymptomatic, these conditions can lead to severe complications if not diagnosed timely. Application of modern diagnostic tools, preventive strategies, and increased public health awareness are crucial for maintaining reproductive health [1–15].

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