

CLINICAL STUDY OF THE EFFECTIVENESS OF METHODS FOR DIAGNOSIS, TREATMENT, AND PREVENTION OF VAGINAL MICROBIOCENOSIS DISORDERS IN WOMEN

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Abstract: Vaginal microbiocenosis plays a crucial role in maintaining women's reproductive health. Disruption of the normal microbial flora leads to a wide range of gynecological diseases, including bacterial vaginosis, candidiasis, and nonspecific vaginitis. This review aims to summarize current approaches to the diagnosis, treatment, and prevention of vaginal microbiota disorders. The paper considers modern molecular genetic diagnostic methods, evaluates the efficacy of various therapeutic regimens including probiotics, and highlights strategies for microbiota restoration. The significance of personalized therapy and the role of recurrent infections are also discussed.

Keywords: vaginal microbiota, bacterial vaginosis, probiotics, diagnosis, dysbiosis, treatment, prevention

Introduction. The human vaginal microbiota is a dynamic ecosystem predominantly composed of lactobacilli species that ensure a protective acidic environment, preventing colonization by pathogenic microorganisms. Disturbance in this balance, termed vaginal dysbiosis or microbiocenosis disorder, is linked with gynecological inflammation, pregnancy complications, and an increased risk of sexually transmitted infections (STIs) [1,2].

Recent clinical interest has grown around identifying reliable diagnostic markers, optimizing therapeutic protocols, and preventing recurrent disturbances. The complexity of vaginal flora and individual variability necessitate a multifactorial approach combining molecular diagnostics and personalized treatment strategies [3].

Diagnostic Approaches. Traditional diagnostic tools for vaginal microbiocenosis disorders include Amsel criteria and Nugent scoring, which evaluate the presence of clue cells, pH levels, and microbial composition under microscopy. However, these methods often lack sensitivity and specificity [4].

Modern diagnostics have shifted towards molecular methods such as polymerase chain reaction (PCR) and next-generation sequencing (NGS), which allow for precise detection of microbial species and their abundance. These techniques enable the identification of bacterial community state types (CSTs) and provide better insight into the microbial shifts associated with pathology [5,6].

Treatment Strategies. Standard treatment for bacterial vaginosis (BV) includes antibiotics such as metronidazole and clindamycin. However, high recurrence rates and adverse effects have prompted exploration into alternative or adjunctive therapies [3,8].

Probiotics, particularly strains of *Lactobacillus crispatus*, *L. rhamnosus*, and *L. reuteri*, have shown promise in restoring the vaginal microbiota following antibiotic therapy. Clinical studies suggest that oral and intravaginal administration of probiotics can enhance recolonization and reduce recurrence [7,9].

Combined regimens incorporating antiseptics, biofilm-disrupting agents, and hormonal regulation are increasingly applied in recurrent cases. Attention is also given to host immune status, sexual practices, and hygiene in therapeutic planning [2,4].

Prevention and recurrence. Preventive strategies include promoting healthy vaginal hygiene, reducing unnecessary antibiotic use, and maintaining estrogen levels, especially during perimenopause. The use of vaginal suppositories containing lactic acid and prebiotics may also aid in maintaining microbial balance.

Recurrent dysbiosis is a significant clinical challenge. Studies have found that persistence of *Gardnerella vaginalis* biofilms contributes to frequent relapse. Thus, long-term management strategies are essential, including behavioral counseling, follow-up microbiota assessments, and individualized maintenance therapy [1,5,10].

Conclusion. Effective management of vaginal microbiocenosis disorders requires an integrative approach that combines modern diagnostics with evidence-based therapeutics and prevention. While significant progress has been made, particularly in molecular diagnostics and probiotic therapy, further research is needed to develop targeted, sustainable, and personalized interventions.

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