



Bacterial Vaginosis: Microbiota Disruption and Its Clinical Implications

Nicole Alvarez*

Department of Microbial Pathogenesis, Santiago Medical College, Santiago, Chile

DESCRIPTION

Bacterial vaginosis often abbreviated as BV, is the most frequent cause of vaginal discharge among women of reproductive age. It occurs when the natural balance of bacteria in the vagina is disrupted. Normally, the vaginal environment is dominated by beneficial bacteria that help maintain acidity and protect against infections. In BV, these healthy bacteria are reduced, allowing other types of bacteria particularly those that thrive without oxygen to multiply excessively. This imbalance can result in an unpleasant odor, discharge, irritation, and an increased risk of other infections.

In a healthy vaginal ecosystem, friendly bacteria play a vital role in keeping the environment stable. They produce substances such as lactic acid, which help maintain a low pH. This acidity is crucial because it prevents harmful bacteria from growing. When the population of these protective bacteria decreases, the vaginal pH rises, making it easier for other organisms to flourish. The overgrowth of these bacteria can lead to the breakdown of the protective mucus lining, which not only weakens the body's defenses but also produces compounds responsible for the characteristic fishy smell associated with BV.

The exact reason why this microbial shift happens is not fully understood, but research has identified several contributing factors. Practices such as vaginal douching can wash away the beneficial bacteria and disturb the natural balance. Having multiple sexual partners or engaging in unprotected sex may also increase the risk, possibly due to the introduction of new bacteria into the vaginal environment. The use of certain contraceptives, such as intrauterine devices, and lifestyle habits like smoking have also been linked to higher rates of BV. However, it's important to note that BV is not considered a traditional sexually transmitted infection, since it can also occur in women who are not sexually active.

From a medical standpoint, BV is more than just a source of discomfort or embarrassment. It can have serious health implications. Women with BV are more susceptible to pelvic inflammatory disease, an infection that can affect the uterus and

fallopian tubes, potentially leading to fertility issues. Pregnant women with BV have a higher risk of preterm labor and low birth weight infants. Additionally, BV increases a woman's vulnerability to sexually transmitted infections, including HIV, due to the weakened protective barriers in the vagina. Unfortunately, recurrence is a major challenge many women experience BV again within a few months of treatment.

Diagnosis is usually made in a clinic using specific criteria or laboratory scoring systems. Clinicians may evaluate the vaginal discharge, measure its pH, perform a test to detect the characteristic amine odor, and examine cells under a microscope. These methods help distinguish BV from other causes of vaginal infections, such as yeast infections or trichomoniasis.

Treatment typically involves antibiotics, most commonly metronidazole or clindamycin, which can be taken orally or applied as a vaginal gel or cream. These medications are effective in relieving symptoms and reducing harmful bacteria. However, they do not always restore the dominance of the beneficial bacteria, which may explain why recurrence is so common. In recent years, there has been growing interest in using probiotics supplements containing live beneficial bacteria to help establish a healthy vaginal environment. While some studies suggest that this approach may reduce recurrence, results have been inconsistent, and more research is needed.

CONCLUSION

Bacterial vaginosis is a widespread and often recurring condition that stems from an imbalance in the vaginal microbiota. While it is not life-threatening, its impact on women's health and quality of life can be significant. Continued research into the vaginal microbiome and new therapeutic approaches may soon lead to more effective and lasting solutions for prevention and treatment. Others are investigating potential vaccines that could prevent recurrence or strengthen the body's natural defenses. Although these developments are still in early stages, they hold promise for improving long-term management of this common condition.

Correspondence to: Nicole Alvarez, Department of Microbial Pathogenesis, Santiago Medical College, Santiago, Chile, E-mail: nicole.alvarez@smc.cl

Received: 26-May-2025, Manuscript No. JBP-25-30039; **Editor assigned:** 28-May-2025, Pre QC No. JBP-25-30039 (PQ); **Reviewed:** 11-Jun-2025, QC No. JBP-25-30039; **Revised:** 18-Jun-2025, Manuscript No. JBP-25-30039 (R); **Published:** 25-Jun-2025, DOI: 10.35248/2155-9597.25.16.546

Citation: Alvarez N (2025). Bacterial Vaginosis: Microbiota Disruption and Its Clinical Implications. J Bacteriol Parasitol. 16:546.

Copyright: © 2025 Alvarez N. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution and reproduction in any medium, provided the original author and source are credited.