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REVIEW

Bacterial vaginosis and its treatment

W Rabbets

Amayeza Information Services, South Africa
Corresponding author, email: wilna@amayeza-info.co.za

Bacterial vaginosis (BV) is a common vaginal infection resulting from an imbalance in the vaginal microbiome, characterised by an overgrowth of anaerobic bacteria. This article provides an overview of BV, including its symptoms, causes, and standard treatments, followed by a discussion on dequalinium chloride as a treatment option. Drawing from clinical guidelines and recent studies, the review highlights the prevalence of BV among reproductive-age women, potential complications, and evidence-based management strategies. Dequalinium chloride is examined for its efficacy, safety, and role in reducing antibiotic use.

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Introduction

Bacterial vaginosis (BV) is one of the most common vaginal infections affecting women of reproductive age, characterised by an overgrowth of certain bacteria that disrupt the natural balance of "good" lactobacilli bacteria in the vagina. This imbalance often leads to symptoms such as a thin, greyish-white vaginal discharge with a fishy odour (especially after sex), mild itching or burning around the vagina, and sometimes no symptoms at all. Risk factors include douching, new or multiple sexual partners, smoking, and having lower oestrogen levels (e.g. during menopause). BV is not typically considered a sexually transmitted infection (STI), but it can increase the risk of other STIs, pelvic inflammatory disease, and complications during pregnancy, such as preterm birth.[1,2]

Diagnosis usually involves a pelvic examination and testing the vaginal pH (often elevated above 4.5) or using the Amsel criteria (which include the presence of clue cells under a microscope, a positive whiff test for odour with potassium hydroxide, and the characteristic discharge). Accurate differentiation between BV and yeast infections or trichomoniasis is essential, as misdiagnosis can lead to ineffective treatment.[1,2,3]

Standard treatments for BV

The goal of treatment is to restore the vaginal microbiome by eliminating excess anaerobic bacteria (such as *Gardnerella vaginalis*) while minimising disruption to healthy flora. First-line options recommended by guidelines from organisations like the Centers for Disease Control (CDC) and the American College of Obstetricians and Gynecologists (ACOG) include:

- Metronidazole: Available as oral tablets (500 mg twice daily for 7 days) or vaginal gel (0.75% once daily for 5 days). Metronidazole is highly effective but can cause gastrointestinal upset, a metallic taste, and can interact with alcohol.[4,5]
- Clindamycin: Vaginal cream (2% once daily for 7 days) or ovules. Clindamycin is considered effective but may weaken latex condoms and increase yeast infection risk.[4,5]

Recurrence of BV is common (up to 50% within 6–12 months), so follow-up care, the use of probiotics, or extended regimens may be advised. Lifestyle changes like avoiding douching and using condoms can help prevent BV.[2,4,6]

The role of dequalinium chloride in BV treatment

Dequalinium chloride (DQC) is a broad-spectrum antiseptic with antibacterial, antifungal, and antiprotozoal properties. Unlike antibiotics like metronidazole, DQC works by disrupting microbial cell membranes without promoting widespread antibiotic resistance, making it a promising option in areas with high rates of antibiotic resistance.[3,7,8]

Dequalinium chloride (e.g. Fluomizin®) is available as a 10 mg vaginal tablet.

Efficacy and evidence

Clinical studies have demonstrated dequalinium chloride's effectiveness in the treatment of BV. A randomised trial in 147 patients found it to be non-inferior to metronidazole, with similar cure rates (approximately 70–80% at one month) and a more favourable gastrointestinal adverse effect profile.[8] Another study in 321 patients compared a 6–day course of dequalinium chloride vaginal tablets to clindamycin vaginal cream, showing equivalent clinical efficacy in resolving symptoms and normalising vaginal flora.[9] Ongoing trials continue to evaluate its safety and long-term outcomes compared to standard therapies.[3]

Dosage and administration

Dosage: One 10 mg vaginal tablet inserted deep into the vagina once daily at bedtime for 6 consecutive nights. If menstruation intervenes (heavy bleeding), treatment is interrupted and resumed afterward.[7]

Dequalinium chloride's place in therapy

Local application reduces the risk of systemic side-effects. Dequalinium chloride is well-tolerated with minimal irritation and is suitable for those allergic to nitroimidazoles (e.g.

metronidazole). It is also effective against mixed infections involving fungi or protozoa. It has the advantage in that microbial resistance to dequalinium chloride has not been documented to a meaningful degree.[3,9] Furthermore, *in-vitro* experiments showed recently that dequalinium chloride disrupts the bacterial biofilm by impacting the biofilm biomass and by destabilising the biofilm matrix.[10]

However, there is limited data on the use of dequalinium chloride during pregnancy and it should be avoided in the first trimester. There is also potential for mild local reactions such as burning. Furthermore, its role in recurrent BV may be limited unless combined with adjunctive measures.[7]

Relevance to gynaecological oncology

BV has been associated with persistence of high-risk human papillomavirus (HPV) infection and the development of cervical intraepithelial neoplasia. Alterations in the vaginal microbiome may also influence susceptibility to cervical cancer and complicate management in immunocompromised women, including those undergoing cancer therapy. Recognition and effective management of BV are therefore relevant not only in general gynaecology but also in gynaecological oncology.[11,12]

Conclusion

BV remains a gynaecological concern due to its high prevalence and potential for complications, yet it is manageable with prompt intervention. Standard antibiotic therapies such as metronidazole and clindamycin are effective but face challenges from recurrence and resistance. Dequalinium chloride represents a promising, well-tolerated alternative, supported by emerging clinical evidence showing comparable efficacy and enhanced safety. Integrating dequalinium chloride into current practice could optimise patient outcomes and reduce antibiotic overuse.

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