Managing Recurrent Bacterial Vaginosis: Insights for Busy Providers

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ABSTRACT

Introduction. Bacterial vaginosis (BV) is a common clinical condition that affects millions of women annually. Serious sequelae exist from untreated infection. Recurrent BV (RBV) is also common with few approved clinical treatment modalities. Review of the current recommendations yields practical tips to aid busy professionals.
Aim. To review the current treatment recommendations for recurrent bacterial vaginosis.
Methods. A literature review was conducted using the keywords: *bacterial vaginosis*, *recurrent bacterial vaginosis*, *vaginal probiotics*, *vaginal reacidifiers*, and *trichomoniasis*.
Main Outcome Measure. Patients with RBV should be treated with the approved suppressive antimicrobial regimen, but new modalities and adjuncts are currently under review and appear safe; however, rates of efficacy still need to be established.
Results. There is no defined etiology of RBV, and thus, a curative treatment remains elusive. Sexual practices, hygiene practices, and the type of sexual partner all affect the rate of BV recurrence. Vaginal reacidifiers and probiotics may offer effective alternatives to the current antimicrobial regimens. Clinicians should obtain an in-depth history to have an accurate picture of the patient's pattern of infection, ensure they are using all clinical tools available to make the correct diagnosis, and educate the patient regarding simple behavioral changes they can make to prevent RBV.
Conclusion. More research is needed to explain and treat RBV. In the meantime, if clinicians maximize all current modalities, they will reduce the recurrence rate in certain patients. **Marshall AO. Managing recurrent bacterial vaginosis: Insights for busy providers. Sex Med Rev 2015;3:88–92.**

Key Words. Recurrent Bacterial Vaginosis; Vaginal Probiotics; Trichomoniasis; Vaginal Reacidifiers

Introduction

Bacterial vaginosis (BV) is a common condition with up to 30% of women affected at any given time [1–3]. The infection occurs in the vagina when the normal hydrogen peroxide-producing *Lactobacillus* species are replaced by an overgrowth of anaerobic bacteria [1–3]. Although episodic treatment regimens cure 80–90% of acute infections [4], up to 60% of those women will have another case of BV within 12 months [4–8]. Those that recur one or more times after completion of an episodic regimen can be diagnosed with recurrent bacterial vaginosis (RBV). Women affected by RBV report impaired self-esteem and disrupted sexual relationships [9]. Women with BV are more likely to contract another STI while infected, increasing the risk of more serious sequelae [1,10]. There is no commonly agreed upon etiology of RBV; thus, providers should review the latest treatment regimens and clinical considerations to aid in the proper management of these patients.

Clinical Concerns

It has been well documented that the optimal bacterial composition for vaginal health is one in which the hydrogen peroxide-producing *Lactobacillus* species thrive, keeping the vagina at a protective pH of <4.5 [1,10]. Each episode of BV

disrupts this environment, significantly raising the pH and producing inflammatory proteins. These proteins are associated with complications in pregnancy, pelvic inflammatory disease, and postoperative gynecological complications [2]. Women who have BV are at higher risk for acquiring HIV, *Neisseria gonorrhoeae*, *Chlamydia trachomatis*, and HSV 2 [1,2]. This risk exists regardless of the existence of symptoms, and approximately half of all infections are asymptomatic [1]. Acute BV can be diagnosed using gram stain with or without a Nugent Score, utilizing microscopy with Amsel's Criteria, or through an approved point of care test, most commonly a vaginal swab [1,2]. All of these methods can accurately detect the shift away from a microbiome predominated by *Lactobacilli* to one where *Gardnerella vaginitis*, *Ureaplasma*, *Mycoplasma*, and *Mobiluncus* species along with other facultative anaerobic bacteria are all present in high numbers [2–6]. One of the seminal studies investigating whether *Gardnerella vaginalis* was the dominant strain once a state of BV is achieved revealed that there was no dominant species, but that women had various combinations of bacteria [11]. Another study found that there were certain strains which predominated within different races of women, but again, no strain was dominant overall [12]. While there is evidence to support that the current recommended antimicrobial regimens decrease the numbers of anaerobes in the vagina during and shortly after treatment, those with RBV continue to return to a state of anaerobe dominance [3]. In recent years, studies have suggested that those with RBV develop a bio-film of anaerobic bacteria in the vagina [13,14]. Penetrating and eradicating this bio-film likely has a role in the rate of cure [13,14]. Clinically, women with RBV do not exhibit a set pattern of symptom development, and there are no established guidelines that recommend routine test of cure after treatment of an initial infection [1,15]. Thus, women with undiagnosed RBV will indefinitely remain at a higher risk for other sexually contracted infections. Clinicians should focus on correctly identifying those with RBV and initiate the recommended suppressive treatment regimen.

Treatment Considerations

There is only one approved suppressive treatment for RBV: nocturnal application of topical metronidazole, two nights a week for 6 months [16]. This dose and frequency appears to prevent significant regrowth of anaerobic bacteria, but does not re-acidify the vagina or help create a therapeutic *Lactobacillus*-dominant bacterial environment [1,14]. Adjunct therapies that address this deficit are currently under study. The most promising are those examining vaginal acidifiers and probiotics.

Decena et al. studied whether the addition of an adjunctive vaginal acidifier either during, or shortly after completing a course of oral metronidazole improved clinical outcomes. Their data found combined therapy was more effective than antibiotic alone and that those women treated with the two modalities were less likely to recur [17]. Another study showed that the addition of vaginal lactic acid to high concentrations of anaerobic bacteria was microbicidal to the anaerobes, but did not affect the levels of *Lactobacillus* [18]. Re-acidification can be accomplished using boric acid [1,17]. A common dose is 600 mg reconstituted into a gelatin ovule, one ovule intravaginally at night for 7–14 nights [19]. This preparation is not available in typical retail pharmacies and requires access to a compounding pharmacy. In addition, many standard insurance plans do not cover prescriptions of this type, requiring out-of-pocket payment by the patient. There are no over-the-counter acidifying products recommended for regular use, although there are several on the market. These barriers make routine use of adjunct re-acidifiers more difficult, but because of these encouraging data, they warrant further investigation.

A robust research stream is currently examining supplementation of antimicrobial treatment with *Lactobacillus*-containing probiotics. Multiple studies have shown positive effects on the cure rate with the use of probiotics [14,20–22]. If recurrences did occur in probiotic-treated patients, the recurrences occurred later than in patients treated with antibiotics alone [14,20–22]. Conflicting data, however, exist regarding the overall and long-term effect of probiotics on BV recurrence [23]. More definitive research as to what species of *Lactobacillus* is best for rapid recolonization needs to be initiated; there are current studies that indicate *L. rhamnosus* does not decrease the rate of recurrence [24]. A recent literature review, completed by Homayouni et al. in 2014, suggests that while the data surrounding probiotic use remain controversial, no adverse effects have been reported throughout the known trials [25]. This makes the use of probiotics potentially attractive, even if the outcomes are not yet consistent. Unfortunately, there are no commercially available, approved products in the United States that