

SCOPE OF PRACTICE

TARGET POPULATION

- Clients with confirmed uncomplicated symptomatic bacterial vaginosis (BV)
- Clients with a presumptive clinical diagnosis of uncomplicated BV from clinical presentation and clinical examination

EXCLUSION CRITERIA

- Clients with complications of infection including symptoms of Pelvic Inflammatory Disease (PID)
- Clients presenting with persistent symptoms post treatment
- Clients who are pregnant or breast feeding

GUIDELINE OBJECTIVES AND ANTICIPATED OUTCOMES

- Provide treatment for clients with a confirmed diagnosed of BV infection
- Identification of individual's STI risk and provision of appropriate screening
- Identify public health risks to control infections by:
 - Provision of STI education and information
 - Identification and exploration of sexual risk taking behaviours

BACKGROUND

CONDITION DESCRIPTION

Bacterial vaginosis (BV) is a common condition causing vaginal symptoms, which primarily present as a malodorous discharge.¹ A high proportion of women with BV are asymptomatic.^{1,2,3} BV is associated with a change in vaginal ecology which results in overgrowth of bacteria namely *Gardnerella vaginalis* and anaerobes which replace the lactobacillus dominated flora.^{1,2,3} BV can be treated but is often reoccurring.^{1,3} No single bacterial agent can be recognised as solely responsible for BV.^{3,4}

SYMPTOMS OF BACTERIAL VAGINOSIS

Vaginal discharge

- Thin, greyish/white, homogenous and adheres to vaginal walls
- Vaginal pruritus may or may not be present

Odour

- More noticeable during menstruation and after sexual intercourse
- Often describe as "fishy"

Table F3.1: Symptoms of BV^{1,2,3,4}

EPIDEMIOLOGY

Incident rates in various studies have ranged from 10 - 45%.⁵ A shift in normal vaginal flora from aerobic, predominantly but not exclusively lactobacilli, to a predominantly anaerobic flora characterizes the condition.^{2,4,5,6} The predominant organisms that cause BV are *Gardnerella*

vaginalis, *Mycoplasma hominus*, and *Ureaplasma urealyticum*. Other anaerobes, such as *Prevotella*, *Mobiluncus*, *Bacteroides*, and *Peptostreptococcus*, have also been identified as flora associated with BV.^{4,5,6,7} BV has been associated with complications, including second trimester miscarriage, pelvic inflammatory disease, preterm birth, premature rupture of the membranes, chorioamnionitis, postpartum endometritis, and postoperative infection after gynaecologic surgery, and as a cofactor in acquisition of HIV.^{2,4,5,6,8} Sexual transmission has not been proven, but therapeutic cures sometimes require that patient and partner be treated simultaneously.^{3,5,9} Evidence for sexual transmission is provided by a significantly greater incidence of bacterial vaginosis in women with more than 5 sexual partners compared to those in lifelong monogamous relationships.^{5,6} Recurrence of disease can be a problem for some women.^{2,4,5,9}

SEQUELAE

- adverse pregnancy outcomes
- preterm delivery
- low birth weight babies
- increased risk of pelvic inflammatory disease
- post abortal sepsis
- increased rates of HIV infection

Table F3.2: Sequelae of BV^{2,3,4,5,6}

INVESTIGATIONS AND DIAGNOSIS

A variety of tests which reflect the changes in vaginal ecology can be used to diagnose BV.¹⁰ The diagnosis of BV does not rest upon detection of any specific organism and isolation of *G.vaginalis*, has poor specificity.^{9,10} Diagnosis is based on the state of vaginal fluid, bacterial flora and amine products.^{5,9,10}

INVESTIGATIONS FOR BV

- vaginal pH
- release of amines by potassium hydroxide
- microscopy of wet preparation
- microscopy of Gram stained vaginal smear
- pregnancy test prior to commencing treatment

Table F3.3: Investigations for BV^{2,3,4,5,6}

pH

Normal vagina pH is around 4.0.² In BV the pH is generally elevated to >4.5. The vaginal pH test has the highest sensitivity of the four characteristics, but the lowest specificity.^{5,6,9,10}

ODOUR

The odour is due to the release of amines, produced by decarboxylation of the amino acids.^{4,5,6,9} When potassium hydroxide is added to the vaginal fluid the amines become volatile producing an odour.^{4,5,6,9,10}

CLUE CELLS ON WET PREPARATIONS AND GRAM STAIN

Vaginal microscopy should demonstrate mixed bacterial flora with few or absent lactobacillus morphotypes.^{4,9} Epithelial cells in wet preparations help diagnose BV.^{1,5,9} Clue cells are squamous epithelial cells covered with many small coccobacillary organisms. In BV a mixture of normal exfoliated vaginal epithelial cells and 20% or more clue cells will be seen.^{4,5,6,9} The adhering bacteria on the cells are predominantly *G. vaginalis* and mixed anaerobes.^{1,9,10}

DIAGNOSIS OF BV

Diagnosis of BV utilises both Amsel's criteria and Nugent's score. Bacterial cultures are not recommended for the diagnosis of BV.^{8,7}

AMSEL'S CRITERIA

For a diagnosis of BV three of the following four criteria must be present.^{7,10}

AMSEL'S	CRITERIA
1.	Clinician observed vaginal discharge- thin, white, adherent, homogeneous appearance
2.	Vaginal pH of >4.5
3.	The presence of clue cells on a gram stain or wet prep from a high vaginal swab
4.	Positive amine test following the addition of potassium hydroxide to sample of discharge (whiff test)

Table F3.4: Amsel's Criteria^{9,10}

NUGENTS CRITERIA

Laboratory diagnosis is made by grading the gram stain of a high vaginal swab according to Nugent's criteria. A score of >7 is diagnostic of BV.¹⁰ The lower the score the greater the proportion of *Lactobacillus*, the higher the score the greater proportion of *Gardnerella* and *Bacteroides* morphotypes.^{9,10}

Score	Lactobacillus	Gardnerella / Bacteroides	Curved Gram variable rods
0	4+	0	0
1	3+	1+	1+ or 2+
2	2+	2+	3+ or 4+
3	1+	3+	
4	0	4+	

Table F3.5: Nugents Criteria^{5,6,9,10}

TREATMENT AND MANAGEMENT

TREATMENT INDICATORS

- Clinical diagnosis based on examination findings
- Laboratory confirmed diagnosis
- Treatment is recommended for all symptomatic women
- Treatment is not recommended in asymptomatic women except those undergoing invasive gynaecological procedures such as, Intrauterine Contraceptive Device insertion, hysteroscopy or termination of pregnancy due to the association between BV and PID¹⁰
- Pregnant women should be advised to inform their obstetrician / midwife of the BV and subsequent treatment.

TREATMENT

- **Metronidazole 400 mg bd for 7 days**

Metronidazole is effective for the short term treatment of bacterial vaginosis.^{9,10,13,14} The efficacy of Metronidazole is related to its effects on obligate anaerobes rather than on the Gardnerella vaginalis organism.^{5,7,10,11} The majority of organisms involved in BV are susceptible to Clindamycin.^{10,11}

Metronidazole can cause nausea and the client should avoid alcohol while on treatment. This is thought to be linked to the inhibition of alcohol oxidizing enzymes and medication should be taken with food.^{5,7,9,13,}

MANAGEMENT ^{9,10,11,12,13,14}

Medication related

- Metronidazole is contraindicated in the first trimester of pregnancy due to teratogenicity
- Pregnancy test should be considered in all women of child bearing age prior to commencing treatment
- Metronidazole may cause a metallic taste in the mouth
- Alcohol should be avoided while taking metronidazole and for 48 hours after ceasing medication
- Additional contraception is advised for women on the oral contraceptive pill

Client education

- Client education normal versus abnormal discharge and signs warranting evaluation
- Avoid douching

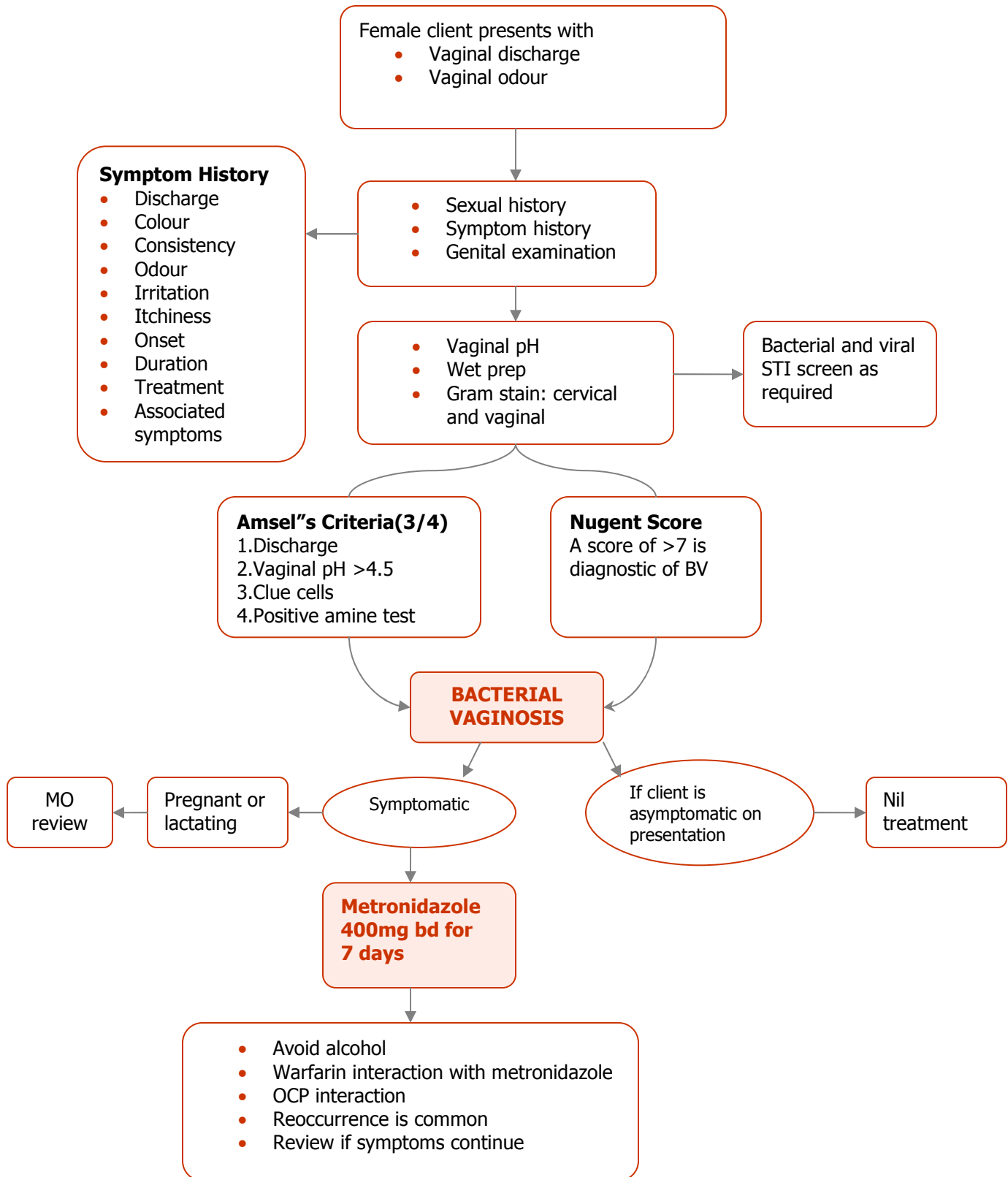
PUBLIC HEALTH CONSIDERATIONS - FOLLOW UP AND REVIEW

- Treatment of male sexual partners is not required ^{9,10}
- Female partners of women with BV should be examined and treated if BV is present ¹²
- Recurrence may result due to persistence of BV associated organisms or failure of *Lactobacillus* to recolonize in the vaginal canal ^{9,10,11}

MEDICATION FORMULARY ^{13,14}

DRUG	INDICATIONS	ROUTE	DOSE	FREQUENCY	THERAPEUTIC CLASS/ Poisons Schedule	CONTRAINDICATIONS/ INTERACTIONS	PRECAUTIONS/ ADVERSE EFFECTS
Metronidazole	Bacterial vaginosis	oral	400mg	Bd for 7 days	Anti infective B2 S4	Blood dyscrasias, hypersensitivities, Pregnancy 1 st trimester, lactation Active CNS disease	Prolonged use, renal, herpetic impairment, elderly, pregnancy and lactation
						Alcohol, warfarin, carmustine, lithium, cyclosporine, disulfiram, 5- fluorouracil, cimetidine, cyclophosphamide	Super infection, pancreatitis GI disturbances Leukopenia and thrombocytopenia Neurological disturbances

CLINICAL ALGORITHM



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