# BACTERIAL VAGINOSIS

Notes updated: 04.07.14

## Aetiology

- Unclear. Not a sexually transmitted infection.
- Characterised by an absence/marked reduction of lactobacilli and an overgrowth of coccoid bacilli with a variety of other organisms such as anaerobes, mycoplasmas and Gardnerella vaginalis. Vaginal pH is increased.
- Risk factors: multiple sexual partners, douching, IUCD use, smoking.

## Symptoms

- 50% are asymptomatic.
- Increased vaginal discharge.
- Fishy odour, accentuated after sex without a condom.

## Signs

- White/grey thin adherent discharge. No associated inflammation of vagina or vulva.

## Complications

- Usually none.
- Implicated in some cases of PID, post-abortal sepsis, post-operative sepsis, late miscarriage, premature rupture of membranes, pre-term delivery and post-partum endometritis.

## Diagnosis

Is a **clinical diagnosis:** the four clinical criteria needed to make the diagnosis are:

1. homogeneous vaginal discharge
2. vaginal pH greater than 4.7
3. amine-like odour when vaginal discharge is mixed with 10% potassium hydroxide
4. vaginal discharge contains “clue cells” representing 20% or more of the epithelial cells present

**Laboratory**: gram stain performed from a vaginal swab in microbiology, and scored using Nugent criteria (scoring system for bacterial morphology). Usually reported as “mixed bacteria present consistent with bacterial vaginosis”

Note: a positive culture for Gardnerella vaginalis is not diagnostic as this is only one of a number of organisms involved and may be isolated from women without bacterial vaginosis.

Assessment is also made on cervical smears (see below).

## Treatment

- Treatment given if: 1. Symptomatic
  2. Asymptomatic high-risk pregnant women (e.g. previous pre-term delivery). This is somewhat controversial.
  3. Asymptomatic women pre-TOP or pre-IUCD insertion. Current practice supports treating these women to reduce the changes of subsequent pelvic inflammatory disease.
- Asymptomatic women and low-risk pregnant women are not treated.
- Treated with antibiotics (Metronidazole, clindamycin).

**References**

1. Eschenbach et al. Diagnosis and clinical manifestations of bacterial vaginosis. Am J Obstst Gynecol 1988;158:819-28
2. Discacciati MG et al. Presence of 20% or More Clue Cells: An Accurate Criterion for the Diagnosis of Bacterial Vaginosis in Papanicolaou Cervical Smears. Diagnostic Cytopathology 2006;34(4): 272-276
3. Sodhani P et al. Prevalence of Bacterial Vaginosis in a Community Setting and Role of the Pap Smear in Its Detection. Acta Cytol 2005;49(6): 634-638
4. Giacomini G et al. Accuracy of Cervical/Vaginal Cytology in the Diagnosis of Bacterial Vaginosis. Sex Transm Dis 1998;25(1):24-27
5. Nugent RP etal. Reliability of Diagnosing Bacterial Vaginosis Is Improved by a Standardized method of Gram Stain Interpretation. J Clin Microbiol 1991;29(2):297-301

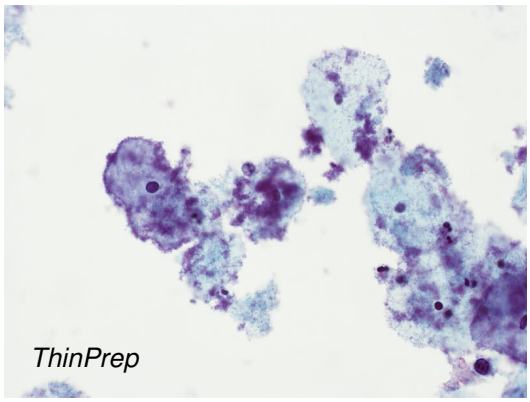
## BACTERIAL VAGINOSIS: IDENTIFICATION BY CYTOLOGY

**Criteria**

- **Numerous small coccobacilli** are present, usually as a filmy background. Larger clumps of bacteria can also be seen. This is more apparent in conventional smears than in liquid-based preparations, where the background of bacteria is largely removed by processing.
- **Individual squamous cells covered by a layer of coccobacilli ("clue cells").** These may be the main diagnostic feature in liquid-based preparations as many background organisms are removed by LBC preparation. One article (Reference 3 above) defines 20% or more squamous cells coated with bacteria as a useful diagnostic threshold for suggesting bacterial vaginosis (conventional slides used in this study).
- **Conspicuous absence of lactobacilli.**

- **The Bethesda 2001 terminology** for suggesting the possibility of bacterial vaginosis in cervical cytology reports, acknowledges that we can only raise this as a possibility as bacterial vaginosis is a clinical diagnosis based on a constellation of findings. Identifying clue cells is only one of these findings. The report reads:

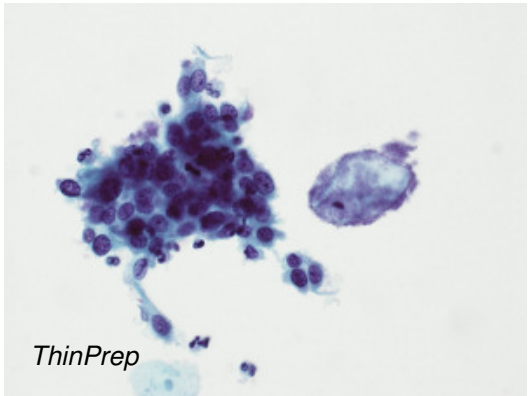
  **There is a shift in microbiological flora suggestive of bacterial vaginosis**



*ThinPrep*

Shift in flora suggestive of bacterial vaginosis.

A clue cell is present and there is a background of numerous coccobacilli with an absence of lactobacilli.



*ThinPrep*

Reactive squamous cells in association with a shift in flora suggestive of bacterial vaginosis

Dr Margaret Sage Cytopathologist, NCPTS