

## Clinical, microbiological, cytological and biochemical differences which play a critical role in the diagnosis of candidiasis and cytolytic vaginosis

Isabel M. F. de Oliveira\*, Paulo Giraldo, Rose Amaral, Michelle Discacciati, José Marcos Sanches.

### Abstract

Vulvovaginal candidiasis (VVC) and cytolytic vaginosis (CV) are gynecological conditions that affect a significant number of women, both with very similar symptoms, being frequently mistaken by one another. In this study we identify some clinical, microbiological, cytological and biochemical differences which play a critical role in the diagnosis and treatment, essentials for a better conduct for women with vaginal discharge complaints.

### Key words:

*Vulvovaginal candidiasis, cytolytic vaginosis, vaginal bacterioscopy*

### Introduction

Vulvovaginal candidiasis (VVC) and cytolytic vaginosis (CV) are gynecological conditions that affect a significant number of women, both with very similar symptoms (vulvar burning usually accompanies CV more, whereas pruritus is more common in VVC) being frequently mistaken by one another<sup>1,2,3</sup>. Therefore, it is essential to investigate characteristics that can be used in clinical practice to aid in the differentiation of these two conditions, because the symptoms may be very similar, but the cytological and microbiological findings are quite different though. As a result, misdiagnosis can be avoided, allowing adequate treatment to patients and avoiding the unnecessary use of antifungals.

The objective of this study is to establish clinical, microscopic and biochemical characteristics that may contribute to the diagnosis of VVC from cytolytic CV.

### Results and Discussion

A cross-sectional study that analyzed the vaginal contents of 24 non-pregnant women (18 – 42 years) attended at the Genital Infections Clinic (CAISM-UNICAMP). All the women selected signed a Free and Informed Consent Term approved by the Ethics and Research Committee no. CAAE: 60648016.8.0000.5404.

Women with VVC and CV had a lumpy vaginal discharge ( $p=0,002$ ) and vaginal hyperemia ( $p=0,001$ ). The inflammatory process was evidenced in the VVC group ( $p=0,001$ ). In the CV group there were statistical significant for the lactobacillus amount ( $p=0,006$ ), vaginal epithelium lysis ( $p=0,001$ ) and vaginal pH ( $p=0,0002$ ).

Based on the results, it is possible to apply a bacterioscopic criterion to differentiate CV from VVC: lower pH, increased amount of lactobacilli and cytolysis, also, the absence of fungi and shortage of polymorphonuclear in the Gram smear (image 1). These criteria are applicable in clinical practice, providing a more detailed consultation, which may allow that the patient leave consultation with appropriate treatment.

### Image 1. Vaginal Bacterioscopy

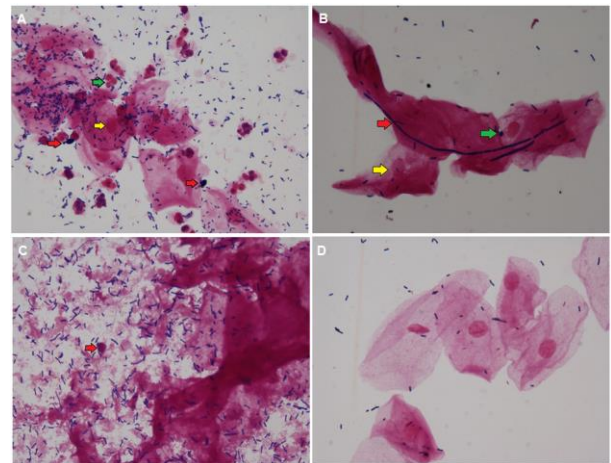


Image1: Vaginal Bacterioscopy: A: VVC - Flora type 1 with neutrophils (green arrow), presence of blastopores (red arrows), and predominance of intermediate vaginal epithelial cells (yellow arrow). B: VVC - Flora type 1, presence of hyphae (red arrow) and blastopores (green arrow) and predominance of intermediate vaginal epithelial cells (yellow arrow) C: CV - Flora type 1 with abundance of lactobacillus, intense lysis in the vaginal epithelium, naked nuclei (red arrow) and no inflammatory process. D: Normal - Flora type 1 with the normal amount of lactobacillus, no inflammatory process and predominance of intermediate vaginal epithelial cells. Diagnosis: normal. Pictures captured on the Genital Infections Outpatient Clinic of the Campinas State University Women's Hospital, Campinas, Brazil.

### Conclusions

To avoid errors in the diagnosis of vulvovaginal candidiasis and cytolytic vaginosis an investigation beyond clinical examination should be conducted through bacterioscopy, biochemical analysis of vaginal contents, including a specific culture for fungi.

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