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AEROBIC VAGINITIS: A NEGLECTED ENTITY AMONG REPRODUCTIVE WOMEN PRESENTING WITH VAGINAL DISCHARGE.

Medical Microbiology

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ABSTRACT

Aerobic vaginitis (AV) is an inflammatory condition with abnormal vaginal flora. Delay in the diagnosis and treatment of AV may lead to adverse both in pregnant and nonpregnant women. With the endeavour of highlighting this condition in non pregnant women, high vaginal swabs were collected from 200 symptomatic non pregnant women, and subjected to gram staining. AV score was determined by modified Donder's score. The prevalence of AV in the present study was 21%. Often neglected, this important clinical condition can be diagnosed by simple microscopy but requires further evaluation for a better understanding of its role in ascending infections.

KEYWORDS

Aerobic Vaginitis, Lactobacillus, Bacterial vaginosis (BV)

INTRODUCTION

Vaginitis is the inflammation of vagina resulting from abnormal vaginal discharge often associated with pruritus and vulval irritation. Vaginal discharge is one the commonest complaint of women in the reproductive age group attending Gynaecology Out Patient Department (GOPD). The leading causes of vaginitis are due to bacterial vaginosis (BV) and vulvovaginal candidiasis (VVC). However, 7- 70% of patients with discharge remains undiagnosed and neglected because of no definitive diagnosis.[1] Such women often harbour abnormal vaginal flora as a consequence of microbial dysbiosis and hence do not classify as BV. Vaginal microbial population of this kind have been referred as 'intermediate flora' in some studies.[2-4] Donder's et al attributed the term aerobic vaginitis to this form of abnormal vaginal flora.[5]

AV is thus altered vaginal flora, distinct from BV and caused by displacement of normal vaginal Lactobacillus species with aerobic microorganism. The most common among gram positive cocci (GPC) are *Streptococcus spp* (58.7%), *Staphylococcus aureus* (41.7%), coagulase negative *Staphylococcus* (37.4%) while among gram negative *Escherichia coli* (23%) are the commonest pathogen identified.[6] Other organisms documented in this condition are *Enterocococcus spp, Klebsiella spp, Pseudomonas spp* etc. AV triggers local vaginal inflammation that manifests as vaginitis resulting in itching or burning sensation, dyspareunia and discharge. These infection if disregarded and not treated, may result in adverse reproductive outcome especially in pregnant women such as preterm birth, premature rupture of membrane, chorioamnionitis, preterm delivery and spontaneous miscarriage.[7-8] In non pregnant women it can lead to PID (Pelvic Inflammatory Disease).[6] Clinician are often not very familiar with this recently described entity leading to underreporting of this clinical condition.

With this background the present study was aimed to determine the prevalence of AV in non pregnant reproductive women attending GOPD with vaginal discharge and to associate the finding with most common age group.

MATERIALS AND METHODS

The study group comprised of 200 non pregnant women of reproductive age group (15-45years) attending GOPD of our tertiary care hospital with complaints of vaginal discharge between January 2018- April 2019. The study was conducted after clearance from institutional ethics committee and written informed consent from the patients.

Women who had recently douched or used spermicidal agent within 72 hours prior to assessment, menstruating women at the time of examination and women who had taken a course of antibiotics within last three week were excluded from the study.

A vaginal swab was taken from the posterior fornix under aseptic condition. Smear from the swab was gram stained and observed under microscope with 40X (for AV score) and 100X (for gram reaction and morphology of the organism) objective of light microscope. The AV score was calculated by determining the presence or absence *Lactobacilli*, number of leukocytes, parabasal cell and vaginal flora as per gram stain according to modified Donder's score, without considering proportion of toxic leukocytes, as it could not be assessed in the gram stain.[5,7] AV was score interpreted as : <3 as no AV, 3-4 as light AV, 5-6 as moderate AV and >6 as severe AV.[7]

RESULTS

The prevalence of AV in the present study was 21% (42/200). 42.8% of these patients were graded as light AV score and 57.2% graded as moderate AV score as per modified Donder's score. None of our cases had severe AV. The most common age group affected was 26-30 years although the statistical significance of affected age group could not be ascertained as number of patients in different age group varied (Table1). Out of 42 cases of AV, GPC were present in maximum number of cases (Figure 1).

DISCUSSION

AV is one of the less common cause of vaginitis, underreported due to lack of awareness of this recently described entity, often resulting in treatment failure and chronicity.

Present study observed a 21% prevalence of AV comparable to study from Bangalore (27.8%)[9] and Kota (33.5%).[10] Although Donder et al had earlier reported a low prevalence of 7.9% in 2002.[5]

Maximum patients with discharge were from 26-30 years age group, and maximum cases of AV were also from this age group followed by 31-35 years. Similar age group with maximum cases of AV have been reported from Bangalore[9], Kota[10].

As per the scoring criteria, we observed a predominance moderate AV score in 57.2% followed by light AV score in 42.8%. This is in contrast

to reports from Bangalore and Kota documenting predominance of light AV score (light AV 80% 7-15% moderate AV).[9-10] The above studies also reported severe AV in 3-4% cases.

Historically, AV was first described more than a decade and half back and it still remains an unknown entity and is often under diagnosed by gynaecologists and venerologists as it does not differs significantly from BV in clinical presentation. These women are often misdiagnosed as BV and are treated accordingly leading to incomplete cure and subsequent recurrences. A disproportionate increase in its population allows replication, prolong survival and persistence, leading to a state of chronic inflammation often referred to as desquamative inflammatory vaginitis.[8] Such conditions in pregnant women allow rapid colonization which further serve as a source of infection to neonates leading to neonatal septicaemia, meningitis or pneumonia.[8] In order to restore this imbalance, anti-AV treatment in form of oral or intravaginal antimicrobials, local corticosteroid, local estrogen administration or probiotics have demonstrated beneficial outcome in patients.

Present study gives us an insight to the fact how AV can be diagnosed easily and thus cease to be misdiagnosed and treated as BV and eventually in the long run be beneficial to both patient and community. Hence, a simple microscopic examination for detection of infectious abnormalities or inflammation, can be of immense importance as a diagnostic tool to rule out AV and provide appropriate treatment to these patients even in resource poor settings.

Table 1- Age Wise Distribution Of Av Cases.

Age group	No. of cases studied (n=200)	No. of positive cases (n=42)
<20	4	0
21 – 25	45	7 (16.66%)
26 – 30	72	15 (35.71%)
31 – 35	35	10 (23.80%)
36 – 40	22	4 (9.5%)
41 – 45	22	6 (14.28%)

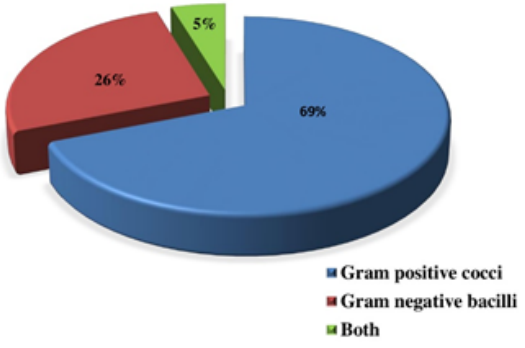

Figure 1- Distribution Of Organism In Av Cases

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