

**Type of article:** Original research article

## **Prevalence of infective vaginitis in females with vaginal discharge attending at a tertiary care hospital**

**B.Archana, V.Usha Rani, Swetha KS, K.Jyothi, Syeda Zaib aara**

### **Authors affiliations:**

1. B.Archana, Assistant Professor, department of Microbiology, Kakatiya Medical College, Hanumakonda. Mob: 9666338476; Email: archana86.adepu@gmail.com
2. V.Usha Rani, Assistant Professor, department of Microbiology, Kakatiya Medical College, Hanumakonda. Mob: 9948293313; Email: doc.usapradeep@gmail.com
3. Swetha KS, Assistant Professor, department of Microbiology, Kakatiya Medical College, Hanumakonda. Mob: 9966217809; Email: swethakamble@gmail.com
4. K.Jyothi, Associate Professor, department of Microbiology, Kakatiya Medical College, Warangal. Mob: 9390104000; Email: jyothikunduru08@gmail.com
5. Syeda Zaib aara, Postgraduate Final year, Department of Microbiology, Kakatiya Medical College, Hanumakonda. Mob: 8374143394; Email: aarazaib.sd@gmail.com

**Corresponding author: Dr K.Jyothi, Associate Professor, department of Microbiology, Kakatiya Medical College, Warangal. Mob: 9390104000; Email: jyothikunduru08@gmail.com**

### **Abstract**

**Introduction:** Vaginitis is the most common gynaecologic clinical condition, history alone is not reliable for the diagnosis of vaginitis. A study was taken to detect the vaginitis in and around Hanumakonda district. **Materials and Methods:** It was a prospective study, conducted in the department of Microbiology, KMC, Hanumakonda. Study protocol was approved by the institutional ethics committee. Study was conducted from October 2021 to July 2022. Women aged > 18 years, complaining of vaginal discharge were included. Non cooperative individuals, those with known vaginitis, those on antibiotic treatment were not considered. The complaints of the participants were asked by face to face interview. Clinical information was recorded in the proforma. The vaginal examination was carried and various findings were recorded. Vaginal samples were collected. Bacterial vaginitis (BV) is diagnosed according to Amsel's criteria. Yeast hyphae in KOH preparation and gram positive budding yeast cells are used to consider vulvo vaginal candidiasis (VVC); Trichomoniasis is confirmed by identifying motile trophozoites. **Results:** Total 50 (100%) members were recruited, mean age was 42.6 years. Maximum (46%) were in 25 – 34 years group. Age wise, statistically there was no significant difference between infective vaginitis (IV) and non IV. Statically there was no significant difference between marital status and vaginitis. BV was detected in majority (38%) followed by

VVC (28%). Conclusion: Simple microscopy such as wet mount and gram stain are useful for rapid diagnosis of IV. However small sample size, lack of risk factors analysis are the limitations of the research.

**Keywords: Vaginitis, bacterial vaginosis, Trichomoniasis**

### **Introduction:**

Vaginitis is the most common gynaecologic clinical condition. As per the reports, at least one episode of vaginitis during life.<sup>1</sup> Vaginal discharge, odor, itching, irritation or burning are the characteristic symptoms of vaginitis.<sup>2</sup> As per the literature, bacterial vaginitis (BV) is the most common form of infective vaginitis (IV) followed by vulvo vaginal candidiasis (VVC) and trichomoniasis. The incidence was 40 – 50%, 20 – 25% and 15 – 20%, respectively; etiology, signs and symptoms are reported in the literature.<sup>3</sup>

Atrophy, irritation and allergy are reported etiology for noninfectious vaginitis. Inflammatory vaginitis are less common, account for 5 – 10% of vaginitis.<sup>4</sup> Diagnosis is made using a combination of symptoms, physical examination findings and laboratory testing.

History alone is not reliable for the diagnosis of vaginitis.<sup>4</sup> Physical examination and laboratory investigations along with history help in the diagnosis of vaginitis.<sup>5</sup> With this a study was taken to detect the vaginitis in and around Hanumakonda district.

### **Materials and Methods:**

It was a prospective study, conducted in the department of Microbiology, KMC, Hanumakonda. Study protocol was approved by the institutional ethics committee. Study was conducted from October 2021 to July 2022. An informed consent was collected from the study participants. Women aged  $\geq 18$  years, complaining of vaginal discharge were included in this research. Non cooperative individuals, those with known vaginitis, those on antibiotic treatment were not considered in this research. Initially, the study participant was explained about the need of the study in their own language. After clarifying all the doubts beyond knowledge, study protocol was implemented.

The complaints of the participants were asked by face to face interview. Structured questionnaire was used for this; it contains the demographic information, medical history, symptoms such as vaginal discharge, vulvovaginal burning, itching, abdominal pain, dysuria. The information was recorded in the proforma. The vaginal examination was carried and various findings like hyperemia, discharge colour, consistency and volume of discharge were recorded.

Vaginal samples were collected from participant using sterile cotton stick. Samples were collected from lateral upper vaginal wall. Immediately, the specimen were transported to Microbiology laboratory. Vaginal P<sup>H</sup>, wet mount and gram stain were used to confirm vaginitis. BV is diagnosed as per the Amsel's criteria.<sup>6</sup> Yeast hyphae in KOH preparation and gram positive budding yeast cells are used to consider VVC; Trichomoniasis is considered among the sexually active women with vaginitis and confirmed by identifying motile trophozoites.<sup>4,6</sup>

**Results:**

Total 50 (100%) members were recruited in this research. The age was ranged between 18 – 60 years and mean age was 42.6 years. Maximum (46%; 23) participants were in 25 – 34 years group. IV was detected in 70% (35) and no etiological agent in the rest. Maximum (32%; 11) participants with IV was diagnosed in 25 – 34 years group. Age wise, statistically there was no significant difference between IV and non IV (Table 1).

Statically there was no significant difference between marital status and vaginitis (Table 2). BV was detected in majority (38%; 19) followed by VVC (28%; 14), trichomoniasis (4%; 2), gonococci (4%; 2) and mixed infection (4%; 2).

**Discussion:**

Vaginal infection is the commonest gynecological issue among the women.<sup>7</sup> The aim of the current research was to find the etiology of vaginal discharge among the sexually active women attending as outpatient during the study period. Out of the 50 study participants, IV was detected in 70% (35). The mean age of the study members was 42.6 years and it was 36.3 years for IV. It indicates that child bearing age is vulnerable for IV. Similarly, Bhalla et al.<sup>8</sup> also reported that child bearing aged women were at risk of IV.

In this research, 44 (88%) were married and the incidence of IV was 64% (32) and 6% (3), respectively among the married and unmarried; statistically there was no significant difference (Table 2). With this we understand that IV is common among the married women. As per the study published by Neetu Singh et al.<sup>7</sup> also high IV was reported in married women; but the statistical analysis was not reported by the investigators. Factors such as sexual activity, menstrual and hormonal changes could be the causes for more IV among the married women.

There were reports especially from rural community regarding usage and re usage of cloth napkins instead of disposable pads for menstrual bleed.<sup>9</sup> The current research was conducted in a tertiary care unit, state government organization. Usually this center is visited by low income population. This could be the reason for high rate of IV in this research.

BV is the leading (38%) in the present study followed by VVC (28%; 14), trichomoniasis (4%; 2), gonococci (4%; 2) and mixed infection (4%; 2). Almost similar findings were reported by different researchers.<sup>9-11</sup> Contrary to these, higher<sup>12, 13</sup> as well as lower<sup>14-16</sup> incidence was also reported. The exact reason for the difference in the incidence of etiology was not clear. In addition to the hygiene environmental factors, life style, number of sexual partners also influence the IV. Hence there is some difference in the incidence of etiology.

**Conclusion:**

BV is the leading in our study followed by VVC and trichomoniasis. Simple microscopy such as wet mount and gram stain are useful for rapid diagnosis of IV. However small sample size, lack of risk factors analysis are the limitations of the research.

**References:**

1. Sobel JD. Vaginitis. *N Engl J Med.* 1997; 337(26): 1896 – 1903.
2. ACOG Practice Bulletin. Clinical management guidelines for obstetrician-gynecologists, number 72, May 2006: vaginitis. *Obstet Gynecol.* 2006; 107(5): 1195 – 1206.
3. Anderson MR, Klink K, Cohrsen A. Evaluation of vaginal complaints. *JAMA.* 2004; 291(11):1368 – 79.
4. Hainer BL, Gibson MV. Vaginitis. *Am Fam Physician.* 2011; 83(7): 807 – 15.
5. Nwankwo TO, Aniebue UU, Umeh UA. Syndromic diagnosis in evaluation of women with symptoms of vaginitis. *Curr Infect Dis Rep.* 2017; 19(1):3.
6. Workowski KA, Bolan GA. Centers for Disease Control and Prevention. Sexually transmitted diseases treatment guidelines, 2015. *MMWR Recomm Rep.* 2015; 64(RR-03): 1 – 137.
7. Neetu Singh, Jyotsna Singh. Study of risk factors for infectious vaginitis in reproductive women. *International Journal of Contemporary Medical Research* 2018; 5(12): L7 – L9.
8. Bhalla P, chawla R, Garg S. Prevalence of Bacterial Vaginosis among women in Delhi, India. *Indian J Med Res* 2007; 31: 167 – 72.
9. Das P, Baker KK, Dutta A. Menstrual hygiene practices, WASH access and the risk of urogenital infection in women of Odisha, India, *Plos One* 2015;10:e0130777.
10. Gopal V, Gopal R, Rupavani, Mangaiyarkarasi T. Clinico-etiological study of vaginal discharge in adult women – A hospital based study. *Ind J Microbiol Res.* 2018; 5(4): 535 – 7.
11. Rekha S, Jyothi S. comparison of visual, clinical and microbiological diagnosis of symptomatic vaginal discharge in the reproductive age group. *Int J Pharm Biomed Res.* 2010; 1(4): 144 – 8.
12. Shawaky, Sherine Mohamed, et al. A study on vaginitis among pregnant and non-pregnant females in Alexandria, Egypt: An unexpected high rate of mixed vaginal infection. *AIMS Microbiology.* 2022; 8.2: 167 – 77.
13. Masand DL, Patel J, Gupta S. Utility of microbiological profile of symptomatic vaginal discharge in rural women of reproductive age group. *J Clin Diagn Res.* 2015; 9(3): QC04 – QC07.
14. Prasad D, Parween S, Kumari K, Singh N. Prevalence, Etiology, and Associated Symptoms of Vaginal Discharge During Pregnancy in Women Seen in a Tertiary Care Hospital in Bihar. *Cureus.* 2021; 13(1): e12700.
15. Ibrahim B, Emmanuel N, Almenares U et al. Prevalence and aetiology of pathological vaginal discharge among third- trimester<sup>7</sup> women attending antenatal care at Kampala international university teaching hospital. *Int J Health Sci Res.* 2017; 7(11): 18 – 31.
16. Vijaya D, Dhanalakshmi TA, Kulkarni S. Changing trends of vulvovaginal candidiasis. *J Lab Physicians.* 2014; 6(1): 28 – 30.

<b>Table 1: Age wise distribution of study population; n (%)</b>			
<b>Age</b>	<b>IV</b>	<b>Non IV</b>	<b>Total</b>
18 – 24	5 (10)	1 (2)	6 (12)
25 – 34	16 (32)	7 (14)	23 (46)
35 – 44	11 (22)	4 (8)	15 (30)
45 – 49	2 (4)	2 (4)	4 (8)
>50	1 (2)	1 (2)	2 (4)
Total	35 (70)	15 (30)	50 (100)
Statistical analysis	$\Psi^2 = 1.7322$ ; $P = 0.784855$ ; statistically not significant.		

<b>Table 2: Correlation between vaginitis and marital status of the study population; n (%)</b>			
<b>Marital status</b>	<b>IV</b>	<b>Non IV</b>	<b>Total</b>
Married	32 (64)	12 (24)	44 (88)
Un married	3 (6)	3 (6)	6 (12)
Total	35 (70)	15 (30)	50 (100)
Statistical analysis	$\Psi^2 = 0.4419$ ; $P = 0.50619$ ; statistically not significant.		