



RESEARCH ARTICLE

APPRAISAL OF THERAPEUTIC MODULES IN RELATION TO SOCIODEMOGRAPHIC AND CLINICOPATHOLOGICAL PROFILE OF ABNORMAL VAGINAL DISCHARGE IN REPRODUCTIVE AGE GROUP

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ABSTRACT

Abnormal vaginal discharge (AVD) is an initial and one of the commonest clinical problem of women belonging to reproductive age group. It is considered to be the second most common problem after menstrual disorders. Cases of AVD is increasing with time especially in the rural population due to poor hygienic practices, low socio-economic status, structural and social inequalities and lack of awareness about the disease and its various complications. Social stigma and gender discrimination discourage women from revealing their reproductive and sexual health issues which also prevents them from taking medical help at proper time, in proper way. The present study was carried out to determine the sociodemographic and clinicopathological profile of AVD in women of reproductive age group coming to Acharya Vinobha Bhave Rural Hospital, Sawangi (M), Wardha – a rural teaching hospital with tertiary healthcare facilities in vidarbha region and also to critically appraise the therapeutic modules. This monocentric hospital based observational study was carried out between 1<sup>st</sup> January 2015 to 15<sup>th</sup> August 2017 in Obstetrics and Gynaecology Department, on 330 women of reproductive age group belonging to rural vidarbha region. Data was collected from in-depth interview of Senior clinicians, Junior residents as well as patients. Out of 330 study subjects, the total no. of AVD cases was 48.15% in 2015; 7.58% in 2016 and 44.24% in 2017. Maximum no. of AVD cases were found to be in females belonging to 36 – 45 years (49.09%) of age group, followed by 26 – 35 years (40.61%) and 15 – 25 years (10.30%). Most common clinicopathological causes of AVD were found to be Bacterial Vaginosis (66.06%), followed by Vaginal Trichomoniasis (24.24%), Mixed infections (06.36%) and Vaginal candidiasis (03.33%). Drugs prescribed to patients were Metronidazole (90.30%), CLID – V Pessary (72.72%), FAS – 3 KIT (06.36%), Fluconazole (03.33%), Candid Pessary (03.33%) and Doxycycline (0.30%). Statistical significance of the study was calculated by using descriptive and inferential statistics using chi square test and p value < 0.05 was considered as level of significance. Software used in analysis was SPSS 17.0 version and GraphPad Prism 6.0 version. Cases of AVD is increasing at an alarming rate in rural vidarbha region and there is no significant change in final outcome of recently prescribed treatment modules. It is recommended that counselling of male and female partners should be carried out through public health awareness camps at a regular interval, especially in the rural region for better hygiene practices, awareness about the disease, prompt consultation in proper way and in order to prevent the various complications of AVD.

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INTRODUCTION

Abnormal vaginal discharge (AVD) is an initial and one of the commonest clinical problem of women belonging to reproductive age group. It is considered to be the second most common problem after menstrual disorders in women of reproductive age group. One in ten women will present with vaginal discharge in the course of a year. (Venugopal et al.,

2017) Persistent vaginal discharge can cause considerable distress to many women. (IMPS et al., 2017) AVD could be of multiple etiologies. Different causes of AVD could be broadly divided into Non-infective, Non-sexually transmitted infection and Sexually transmitted infection. Non-infective AVD could be physiological, due to cervical ectopy, foreign bodies or vulval dermatitis. Non-sexually transmitted infections could be due to bacterial vaginosis and candida infection. Sexually transmitted infections such as Chlamydia trachomatis, Neisseria gonorrhoeae, Trichomonas vaginalis and Herpes simplex virus infection may also lead to AVD. (Spence and

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Melville, 2007; Mitchell, 2004) The vagina, ectocervix and endocervix are prone to various infections caused by various pathogens. The type of infection depends on the type of epithelium and other factors such as pH of the microenvironment, etc. *Trichomonas vaginalis* and candida infections are most commonly seen in the ectocervix and vaginal stratified squamous epithelium. *Chlamydia trachomatis* and *Neisseria gonorrhoeae* infections are most commonly in the columnar epithelium of endocervix. Herpes simplex virus may infect both, the stratified squamous epithelium as well as the columnar epithelium. Vaginal discharge could be the clinical symptom of infections caused by any of these organisms. (Venugopal *et al.*, 2017) Although there are various etiologies for abnormal vaginal discharge, bacterial vaginosis, vulvovaginal candidiasis, and trichomoniasis are the most common ones. Incidences of mixed vaginal infections have also been reported. Bacterial vaginosis, characterized by a malodorous discharge, is caused by the overgrowth of several facultative and anaerobic bacterial species and is common in women with multiple sex partners. Pruritus and a specific curd like vaginal discharge could be diagnostic for vulvovaginal candidiasis. Frothy discharge which could be of copious yellow - green colour could be suggestive of vaginal trichomoniasis. (Venugopal *et al.*, 2017) Sexually transmitted infections are linked to complications like preterm labour, prenatal morbidity and may also lead to a two-fold increased risk of Human Immunodeficiency Virus (HIV) acquisition. Thus, its control and prophylactic measures are important in improving reproductive health of women, neonatal health and prevention of HIV/AIDS. (Spence and Melville, 2007; French *et al.*, 2004) Women living in rural areas are more vulnerable to AVD due to many unhealthy practices, low socio-economical status, structural and social inequalities. Further, the presence of social stigma and discrimination may discourage women from revealing their reproductive and sexual health issues which may increase the possibility of transmitting diseases. (IMPS *et al.*, 2017; Anand *et al.*, 2015) Recent advances are changing the various investigational approaches and techniques and the treatment modules of abnormal vaginal discharge. The health care professionals need to have a thorough knowledge about the various upcoming diagnostic and management techniques, emerging epidemiological data, various types and presentations of vaginal discharge and how to approach the management according to its aetiology. (Venugopal *et al.*, 2017)

**The various management techniques according to the aetiology are as follows:**

#### **Bacterial vaginosis**

- Metronidazole orally or as intravaginal gel and clindamycin intravaginal cream have been the mainstreams
- Metronidazole could be used as a single oral dose (2g) or could be given twice daily in the dose of 400 – 500 mg for 5 – 7 days.
- The topical drugs such as clindamycin cream (2%) or metronidazole gel (0.75%) intravaginally can also be used once daily for 5 – 7 days

#### **Vulvovaginal candidiasis**

- Fluconazole 150 mg orally or vaginal clotrimazole, econazole, etc (imidazole preparations) as a single dose can be used

- Use of various alternative treatments like tea tree oil and yoghurt containing *Lactobacillus acidophilus* have also been reported but the results are yet under evaluation

#### **Chlamydia trachomatis**

- Oral drugs such as Doxycycline 100 mg twice in a day for seven day or azithromycin 1 g in a single dose is used

#### **Gonorrhoea**

- Cefixime 400 mg as a single oral dose or ceftriaxone 250 mg intramuscularly as a single dose

#### **Trichomonas vaginalis**

- Metronidazole 2 g orally in a single dose or metronidazole 400-500 mg twice daily for five to seven days (Spence and Melville, 2007; Meena and Bansal, 2016)

This present study has been undertaken to appraise different therapeutic modules in relation to sociodemographic and clinicopathological profile of abnormal vaginal discharge in females of reproductive age group belonging to rural vidarbha region...

#### **Objectives**

- 1) To study the sociodemographic profile of abnormal vaginal discharge
- 2) To study the clinicopathological profile of abnormal vaginal discharge
- 3) To appraise the treatment modalities in patients with abnormal vaginal discharge among females of reproductive age group

### **MATERIALS AND METHODS**

**Study design :** A Monocentric Hospital Based Observational Study

**Locus of Study :** Acharya Vinobha Bhave Rural Hospital, J.N.M.C. Sawangi (Meghe), Wardha.

**Study Population :** Female patients of reproductive age group with complaints of abnormal vaginal discharge coming to A.V.B.R.H, J.N.M.C. Sawangi (M), Wardha.

**Sample Size :** 330

**Duration of Study :** 1<sup>st</sup> January 2015 to 15<sup>th</sup> August 2017

#### **Inclusion criteria :**

- 1) Women willing to participate in the study
- 2) Age group – 15 – 45 years
- 3) Women of reproductive age group with complaints of abnormal vaginal discharge

#### **Exclusion criteria :**

- 1) Women of reproductive age group with other concomitant conditions such as Diabetes mellitus

- 2) Women with other genital tract infections/diseases
- 3) Pregnant women of reproductive age group

**Statistical significance:** Statistical analysis was done by using descriptive and inferential statistics using chi square test and p value < 0.05 is considered as level of significance.

**Software used in analysis :** SPSS 17.0 version and GraphPad Prism 6.0 version

**Ethical clearance :** The study was approved by the Institutional Ethical Committee (Dated : 31/03/2017)

**Methodology :**

**Step-1 :** Data collected from the database of Medical Record Department of A.V.B.R.H.

**Step-2 :** In depth discussion with unit heads, Associate professors, Assistant Professors and Junior health care professionals of OBGY department

**Step-3 :** In depth Interview of patients attending OBGY OPD

**Step-4 :** Monitoring and evaluation

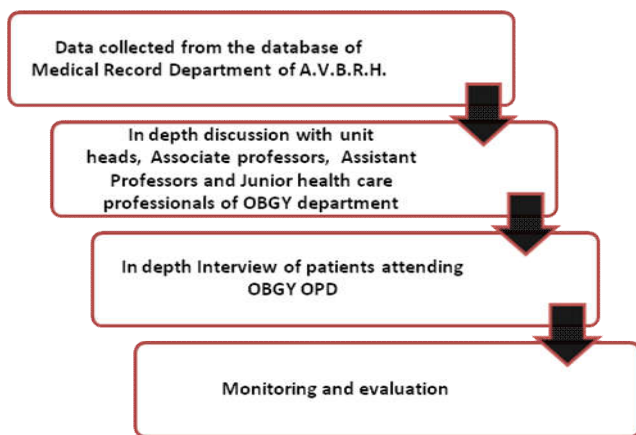


Figure 1. Methodology

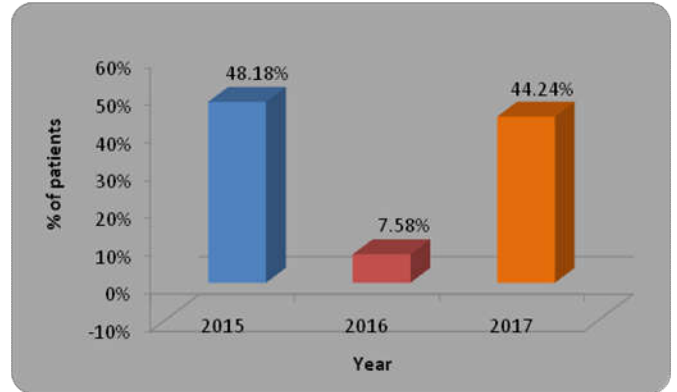
Table 2. Pathological spectrum of AVD in women of reproductive age group

Spectrum of AVD	2015		2016		2017		X2-value
	No.	%	No.	%	No.	%	
Bacterial Vaginosis	81	50.94	07	28.00	130	89.04	77.03, p = 0.0001, S
Vaginal Trichomoniasis	63	39.62	17	68.00	00	00.00	101.4, p = 0.0001, S
Vaginal Candidiasis	10	06.29	00	00.00	01	0.69	9.06, p = 0.010, S
Mixed Infection	05	03.15	01	04.00	15	10.27	5.36, p = 0.06, NS

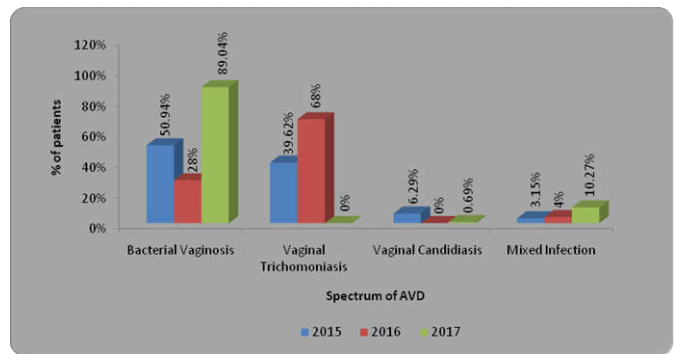
**OBSERVATIONS AND RESULTS**

Table 1. Total AVD cases in women of reproductive age group

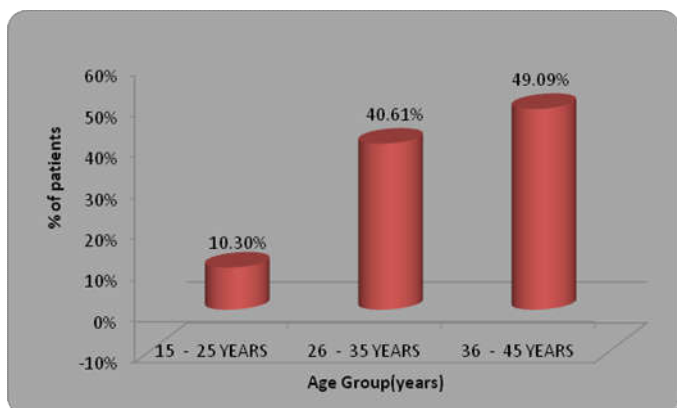
No.	2015		2016		2017		TOTAL
	No.	%	No.	%	No.	%	
159	48.18	25	7.58	146	44.24	330	



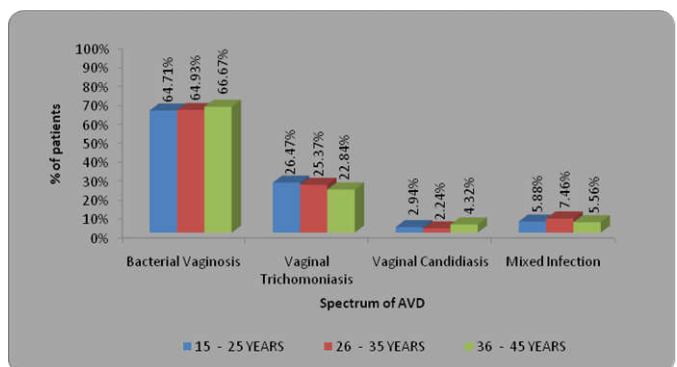
Graph 1.



Graph 2.



Graph 3.



Graph 4.

**Table 3. AVD cases in different groups of women of reproductive age group**

15 - 25 YEARS	26 - 35 YEARS	36 - 45 YEARS
No. %	No. %	No. %
34 10.30	134 40.61	162 49.09

**Table 4. Pathological spectrum of avd in different groups of women of reproductive age group**

Spectrum of AVD	15 - 25 YEARS	26 - 35 YEARS	36 - 45 YEARS	X2-value
	No. %	No. %	No. %	
Bacterial Vaginosis	22 64.71	87 64.93	108 66.67	0.11, p = 0.94, NS
Vaginal Trichomoniasis	09 26.47	34 25.37	37 22.84	0.25, p = 0.88, NS
Vaginal Candidiasis	01 2.94	03 2.24	07 4.32	0.68, p = 0.70, NS
Mixed Infection	02 5.88	10 7.46	10 5.56	0.11, p = 0.94, NS

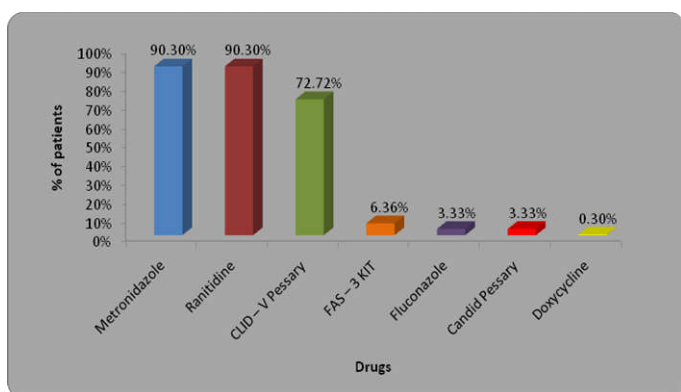
X2-value = 0.99, p = 0.98, NS

**Table 5. Treatment modules of AVD**

Drugs	No. of patients	% Of patients
Metronidazole	298	90.30
Ranitidine	298	90.30
CLID – V Pessary	240	72.72
FAS – 3 KIT	21	6.36
Fluconazole	11	3.33
Candid Pessary	11	3.33
Doxycycline	1	0.30

**Table 7. Treatment modules for vaginal trichomoniasis (Total cases 80)**

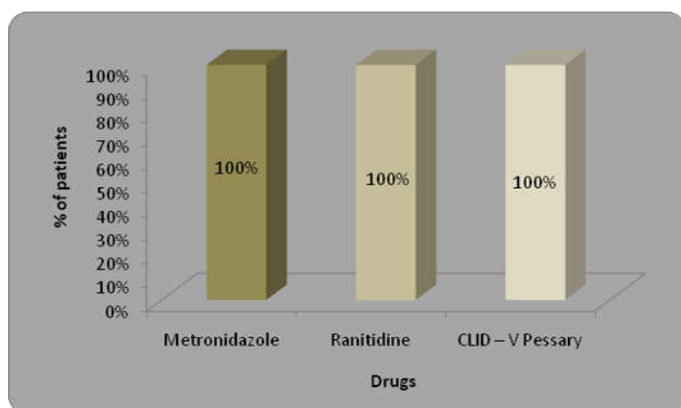
Drugs	No. of patients	% of patients
Metronidazole	80	100
Ranitidine	80	100
CLID – V Pessary	1	1.25
Doxycycline	1	1.25



**Graph 5.**

**Table 6. Treatment modules for bacterial vaginosis (Total cases 218)**

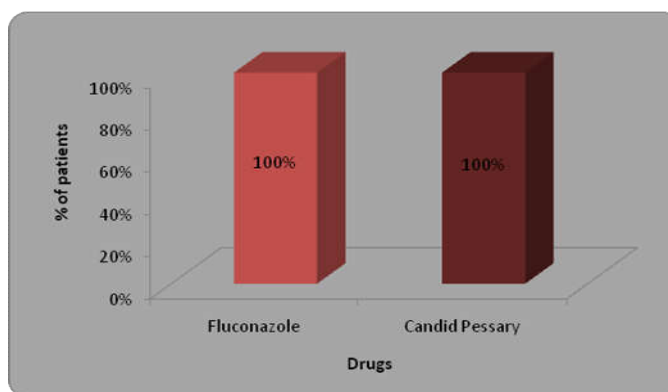
Drugs	No. of patients	% of patients
Metronidazole	218	100
Ranitidine	218	100
CLID – V Pessary	218	100



**Graph 6.**

**Table 8. Treatment modules for vaginal cndidiiasis (Total cases 11)**

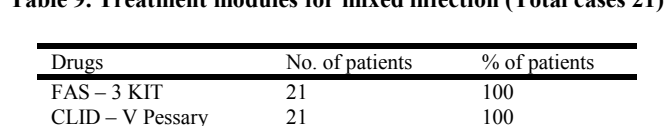
Drugs	No. of patients	% of patients
Fluconazole	11	100
Candid Pessary	11	100

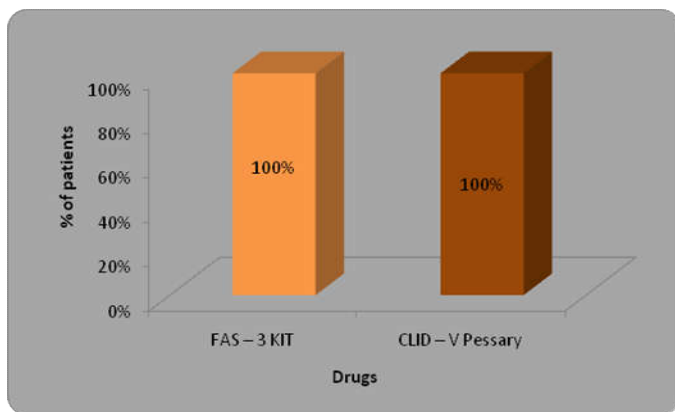


**Graph 8.**

**Table 9. Treatment modules for mixed infection (Total cases 21)**

Drugs	No. of patients	% of patients
FAS – 3 KIT	21	100
CLID – V Pessary	21	100





Graph 9.

## DISCUSSION

In the present study, out of 330 patients visiting Acharya Vinobha Bhawe Rural Hospital, Sawangi (M), Wardha with complaints of abnormal vaginal discharge, 159 (48.18%) were reported in the year 2015, 25 (7.58%) in 2016 and 146 (44.24%) in 2017. In this study the spectrum of Abnormal Vaginal Discharge (AVD) included Bacterial vaginosis (BV), Vaginal Trichomoniasis (VT), Vaginal candidiasis (VC) and Mixed infections (MI) a finding inconsonance with the study carried out by Haixia Wang *et al* which reveals that, Bacterial Vaginosis, Vaginal Candidiasis and Vaginal Trichomoniasis are responsible for the majority of vaginal infections and the clinical symptoms mainly includes AVD. (Wang *et al.*, 2017) In the year 2015, the most common infection causing AVD was BV 81 (50.94%) followed by VT 63 (39.62%), VC 10 (06.29%) and MI 05 (03.15%); in 2016, VT 17 (68%) was the most common, followed by BV 7 (28%) and MI 01 (4%). No cases of VC were reported. In 2017, BV 130 (89.04%) being the most common was followed by MI 15 (10.27%) and VC 01 (0.69%). No cases of VT were reported. According to Swetha Venugopal *et al*, a study carried out in the southern region, Bacterial Vaginosis (27%) was the most common microbiological cause of abnormal vaginal discharge, followed by trichomoniasis (25%), vaginal candidiasis (22%) and combined infection (3%). (Venugopal *et al.*, 2017) According to the present study, AVD was most common in 36 – 45 years of age group (49.09%) followed by 26 – 35 years (40.61%) and 15 – 25 years (10.30%), a non similar finding was seen in the study carried out by Swetha Venugopal *et al*, among the 100 cases with abnormal vaginal discharge, majority of the patients were in the age group 26–35 years (34%) because they belong to the sexually active age group. (Venugopal *et al.*, 2017) The present study also found that, women belonging to age group 36 – 45 years had the maximum percentage of patients suffering from BV(66.67%) and VC (4.32%). Maximum cases of VT (26.47%) were seen in patients belonging to 15 – 25 years of age group whereas MI was maximum in 26 – 35 years of group. In the present study, the most common drugs prescribed for AVD were Metronidazole (90.30% patients) and Ranitidine (90.30%), followed by CLID – V Pessary (72.72%), FAS – 3 KIT (6.36%), Fluconazole (3.33%), Candid Pessary (3.33%) and Doxycycline (0.30%). It was seen that, Metronidazole, Ranitidine and CLID – V Pessary were the drugs prescribed to treat BV. Out of 218 cases of BV, Metronidazole, Ranitidine and CLID – V Pessary were prescribed in 100 % of the patients. The study done by Des Spence *et al* showed that, BV was treated with oral metronidazole in various doses for 5 – 7 days along with

intravaginal clindamycin cream or metronidazole gel once daily for 5 - 7 days. (Spence and Melville, 2007) In the present study, Metronidazole, Ranitidine, CLID – V Pessary and Doxycycline were prescribed for VT. Out of 80 cases of VT, Metronidazole and Ranitidine were prescribed in 100 % of the patients whereas CLID – V Pessary and Doxycycline were prescribed in only 1.25% of the patients. According to Des Spence *et al*, Metronidazole 2 g orally in a single dose or metronidazole 400-500 mg twice daily for five to seven days was prescribed for the treatment of VT. (Spence and Melville, 2007) Des Spence *et al* also showed that VC was treated with vaginal imidazole preparations (such as clotrimazole, econazole, miconazole) or fluconazole 150 mg orally (Spence and Melville, 2007), a finding inconsonance with the present study where the drugs prescribed for VC were Fluconazole and Candid Pessary. Out of 11 cases of VC, 100 % of the patients received Fluconazole and Candid Pessary as well. FAS – 3 KIT and CLID – V Pessary were prescribed for MI. Out of 21 patients of MI, 100% of the patients received FAS – 3 KIT and CLID – V Pessary. Health education programmes should be conducted in order to empower the community especially the younger women, in order to recognize abnormal vaginal discharge as early as possible so that the complications, recurrence and co-transmission can be treated and prevented. (Ilankoon *et al.*, 2017)

## Conclusion

The present study was carried out on 330 female patients of reproductive age group with complaints of abnormal vaginal discharge visiting Acharya Vinobha Bhawe Rural Hospital, Sawangi (M), Wardha. A fluctuating pattern of no. of AVD cases was seen (2015: 48.15%; 2016: 7.58% and 2017: 44.24%). In the present study, females belonging to 36 – 45 years (49.09%) of age group had the highest number of AVD cases followed by 26 – 35 years (40.61%) and 15 – 25 years (10.30%). It was also observed that the maximum no. of patients visiting OBGY OPD in our rural hospital had low socioeconomic status and lack of knowledge about AVD and its complications. The most common clinicopathological causes of AVD were found to be Bacterial Vaginosis (66.06%), followed by Vaginal Trichomoniasis (24.24%), Mixed infections (06.36%) and Vaginal candidiasis (03.33%). In the present study, Metronidazole (90.30%), Ranitidine (90.30%), CLID – V Pessary (72.72%), FAS – 3 KIT (06.36%), Fluconazole (03.33%), Candid Pessary (03.33%) and Doxycycline (0.30%) were the drugs used for the treatment of AVD. Drugs used for BV were Metronidazole, Ranitidine and CLID – V Pessary; for VT, Metronidazole, Ranitidine, CLID – V Pessary and Doxycycline; for VC, Fluconazole and Candid Pessary and for MI, FAS – 3 KIT and CLID – V Pessary. It is recommended that counselling of male and female sex partners should be carried out through public health awareness camps at a regular interval, especially in the rural region for better hygiene practices, awareness about the disease, prompt consultation and in order to prevent the various complications of AVD.

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