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Original Research Article

Efficacy of tablet metronidazole and clindamycin in management of bacterial vaginosis in a tertiary care hospital in Chengalpattu district

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ABSTRACT

Introduction: BV is a common disorder, yet poorly understood poly-microbial vaginal infection. It is more commonly seen in women in reproductive age group. It has high prevalence in African women specially those in sub-Saharan Africa. Approximately 50-69% of women with BV are not symptomatic and women who presents with symptoms varies from Gray-white offensive vaginal discharge intensified after sexual intercourse and during menstruation, lower abdominal pain and dyspareunia. BV is diagnosed by two different criteria such as Amsel's and Nugent's. After the diagnosis according to the above criteria, CDC & ACOG recommended either orally or Intravaginally Metronidazole or Clindamycin is given to treat BV.

Objectives: To study the effectiveness of Clindamycin on Bacterial Vaginosis and compare with commonly used Metronidazole.

Materials and Methods: A randomized control study was done after approval from Institute Ethical committee on patients who came to Gynaecology OPD in Shri Sathya Sai Medical College and Research Institute after taking written and informed consent.

All study subjects were examined in the OPD. Under aseptic precautions a high vaginal swab was taken and sent to microbiology lab for culture and sensitivity and using the criterias mentioned below such as Amsel's and Nugent's, diagnosis will be noted and treated accordingly.

Results: Clindamycin is better than Metronidazole with respect to Amsel's criteria and Nugent's after treatment ($P < 0.05$) and with respect to the culture results after treatment ($P < 0.05$).

Conclusion: Oral Clindamycin may be preferable to Oral Metronidazole because of its broader spectrum of activity.

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1. Introduction

BV is a common disorder, yet poorly understood poly-microbial vaginal infection.¹ It is more commonly seen in women in reproductive age group. It has high prevalence in African women specially those in sub-Saharan Africa.¹

Approximately 50-69% of women with BV are not symptomatic and women who presents with symptoms varies from Gray-white offensive vaginal discharge

intensified after sexual intercourse and during menstruation, lower abdominal pain and dyspareunia. BV is diagnosed by two different criteria such as Amsel's and Nugent's.²

After the diagnosis according to the above criteria, CDC & ACOG recommended either orally or Intravaginally Metronidazole or Clindamycin is given to treat BV.³

In 2015 guidelines regarding sexually transmitted disease treatment, the CDC recommended BV treatment with a 7-days regimen of 500 mg of Tab. Metronidazole two times daily, a 5-days regimen of 0.75% Metronidazole gel administered intravaginally,⁴ and a 7-days regimen of 2%

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Clindamycin cream administered intravaginally was used.

Metronidazole provides excellent action against obligate anaerobes but is not effective against aerobes and facultative anaerobes, while Clindamycin has broader spectrum of activity against the gram-positive aerobes and anaerobes.⁵

2. Materials and Methods

A Randomized control study was done after approval from Institute Ethical committee on patients who came to Gynaecology OPD in Shri Sathya Sai Medical College and Research Institute after taking written and informed consent.

All study subjects were examined in the OPD. Under aseptic precautions a High vaginal swab was taken and sent to microbiology lab for culture and sensitivity and using Amsel's criteria and Nugent's criteria diagnosis will be noted.

2.1. Amsel's composite criteria include:^{6,7}

1. If ph of vagina is > 4.5
2. If clue cells are present in gram-stained vaginal discharge smears and
3. If whiff test is positive.
4. Characteristic Vaginal discharge.
5. According to Amsel's, if 3 of the 4 criteria are positive, the patient is diagnosed as Bacterial Vaginosis.

2.2. Nugent's criteria^{6,7}

It evaluates three types of bacteria by Gram staining: Lactobacillus, Bacteroides and Mobilincus.

The study population is divided into 2 groups randomly Group-M Group-C, 33 each by computer generated list of random numbers using simple randomization technique. Patients were blinded to the study drug, treated and monitored by the Gynaecologists who were aware of the drug.

Informed consent was taken stating their commitment to take the drugs as given. Group 'M' (Metronidazole) will be given Tab.Metronidazole 400mg TDS for seven days, while Group 'C' (Clindamycin) were given TAB.Clindamycin 300mg twice daily for seven days. The study subjects were followed up after two weeks of completion of treatment. Then, a vaginal swab is taken again for laboratory test, using Amsel's criteria and Nugent's criteria, those who turned negative were noted. Those who remained positive are recorded as the treatment failures and further management is done accordingly.

2.3. Statistics and analysis of data

Data was entered in MS-EXCEL and statistical analysis was done by SPSS 24 software. These results were presented in descriptive statistics and appropriate test of significance

were applied with 5% level of significance and 95% confidence interval.

3. Results

Table 1: Symptoms before treatment among study participants

Symptoms	Metronidazole	Clindamycin	P value
Itching			
Yes	22	21	0.82
No	11	12	
LBA			
Yes	6	5	0.84
No	27	28	
Abdominal pain			
Yes	13	12	0.83
No	20	21	
Fever			
Yes	3	2	0.76
No	30	31	

The two groups are comparable with respect to symptoms before treatment among study participants.

Table 2: Symptoms after treatment among study participants

Symptoms	Metronidazole	Clindamycin	P value
Itching			
Yes	11	10	0.76
No	22	23	
LBA			
Yes	2	1	0.68
No	31	32	
Abdominal pain			
Yes	6	7	0.64
No	27	26	
Fever			
Yes	2	2	1
No	31	31	

Table 3: Amsel's criteria after treatment

Criteria	Metronidazole	Clindamycin	P value
Positive	6	3	0.02
Negative	27	30	
Total	33	33	

Clindamycin is better than metronidazole with respect to amsels criteria after treatment (P<0.05).

Table 4: Nugent's criteria after treatment

Criteria	Metronidazole	Clindamycin	P value
Positive	5	2	0.01
Negative	28	31	
Total	33	33	

Clindamycin is better than metronidazole with respect to nugents criteria after treatment (P<0.05).

Table 5: Culture results among study participants

Culture	Metronidazole	Clindamycin	P value
Sterile	25	30	0.04
Growth	8	3	
Total	33	33	

Clindamycin is better than metronidazole with respect to Culture results after treatment ($P < 0.05$).

4. Discussion

The Centres for Diseases Control and Prevention and the American College of Obstetricians and Gynaecologists (ACOG) both recommended Metronidazole and Clindamycin as the best available treatments for BV.⁸ Clinical trials comparing two different antimicrobial treatments found they were clinically equivalent,⁹ approving 50% recurrence rates after six months.¹⁰ Clindamycin has greater anti-gram-positive anaerobe and aerobe spectrum action, while Metronidazole is more effective against obligate anaerobes but less effective against aerobes and facultative.¹¹

According to a 2013 comprehensive review, BV prevalence differs between and within nations around the world. Compared to women from West Africa (7% in Burkina Faso), women from South and East Africa had greater rates of BV (68% in Mozambique, 51% in Lesotho, 44% in Kenya, and 37% in Gambia). Women's BV rates are moderately high in Poland (19%), Norway (24%), and Turkey (23%). Women from Australia, New Zealand, Southeast Asia, and Indonesia usually have BV rates that are higher than 30%.¹²

A study similar to our study was done by D G Ferris et al. one week of oral Metronidazole 500 mg twice daily, five days of 0.75% Metronidazole vaginal gel, or seven days of 2% Clindamycin vaginal cream, were given to 100 women who had been diagnosed with bacterial vaginosis using conventional criteria.^{13–15} Women who also had vaginal trichomoniasis or vulvo-vaginal candidiasis were not included. For the treatment of bacterial vaginosis, oral metronidazole, metronidazole vaginal gel, and clindamycin vaginal cream all had approximately identical cure rates.¹⁶ Similar rates of post-treatment vulvo-vaginal candidiasis were observed in patients treated with these treatments, although those utilising the intra vaginal products expressed greater satisfaction with the course of treatment.^{17–19}

Contrary to our study findings, W L Greaves et al.²⁰ in their study of one of two treatments—T. Metronidazole 500 mg twice daily for seven days or Clindamycin 300 mg twice daily for seven days—was given to the 143 women who complained of vaginitis. Patients treated with Clindamycin (6.1%) and those treated with Metronidazole (4%), however, experienced the same failure rate.^{21,22}

Researchers Hantoushzadeh et al.²³ (96.20%) and Raja et al. (93.86%) found the highest clinical cure rates for

BV treatments similar to our study among women while examining who are pregnant and not pregnant women, respectively. One group of 250 pregnant women in Iran was given the probiotic treatment of eating mixed-lactobacilli yoghurt, while the other group was given the antibiotic treatment of eating Clindamycin orally (300 mg).

In our study comparing with The prevalence of bacterial vaginosis (BV) was found to be 23% in the study by Ieoma et al.²⁴ which is consistent with other local investigations that found bacterial vaginosis prevalence among pregnant women to range from 17.3% to 64.3%. There are pronounced differences in prevalence between nations, races, and even groups living in the same nation.

5. Limitations

This study has certain limitations as it was done in a smaller population and in a rural setting without any bias. A larger sample is needed for accurate estimation of prevalence of Bacterial Vaginosis. The study population included women with Leucorrhoea. This study does not include women with pregnancy.²⁵ Prospective long-term studies in a larger population will help comparison of both Treatment of bacterial vaginosis with metronidazole and clindamycin.²⁰

6. Conclusion

Oral Clindamycin may be preferable to oral Metronidazole because of its broader spectrum of activity. We have proved in our study that Clindamycin is better than Metronidazole but more studies need to be conducted in future. These findings can be used to provide better treatment for the women with Bacterial Vaginosis. As the risk of Bacterial Vaginosis increases with multiple sexual partners and poor hygiene, adolescent girls and young women should be appropriately educated about avoidance of multiple sexual partners, use of barrier contraception and maintenance of proper personal hygiene.

7. Source of Funding

None.

8. Conflict of Interest

None.

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