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RESEARCH ARTICLE

INCIDENCE OF VAGINAL TRICHOMONIASIS IN REPRODUCTIVE AGE GROUP AND CRITICAL APPRAISAL OF THERAPEUTIC MODULES

***Dr. Rishu Y. Mishra, Dr. Rajesh K. Jha, Dr. Priyanka B. Aglawe, Dr. Ankur A. Bhute, Kamini M. Sakore Dr. Deepti S. Shrivastava and Dr. Vedprakash Mishra**

Department of Pharmacology, DMIMS (DU), Jawahar Lal Nehru Medical College, Sawangi (M), Wardha India

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ABSTRACT

Recent epidemiological studies have revealed that incidence of trichomoniasis is more than 170 million cases annually at global level. In India, it has increased from 2 to 7 % of all sexually transmitted infections. Cases of trichomoniasis is increasing with time due to development of industries, lifestyle modulation, inadvertent encroachment of mass media and advances in various types of marketing strategies. Hence, the present study was aimed to determine the incidence of vaginal trichomoniasis in reproductive age group belonging to rural teaching hospital with tertiary healthcare facilities in vidarbha region and also to critically appraise the therapeutic modules. This hospital based analytical study was carried out between 1st January 2014 to 31st December 2016 in Obstetrics and Gynaecology Department of A.V.B. Rural Hospital on 304 women of reproductive age group belonging to rural vidarbha region. The data were collected from in-depth interview of unit heads,professors, associate professors, assistant professors, Junior residents as well as patients. In A.V.B. Rural Hospital, Wardha, the incidence of Vaginal Trichomoniasis was 21.95% in 2014, 34.15% in 2015 and 37.80% in 2016.Drugs prescribed to patients were Doxycycline (63.41%), Metronidazole (81.09%), Ofloxacin+Ornidazole (18.90%), Ranitidine (100%) and Clid-V Pessary (80.18%). Statistical significance was calculated by using z-test for single proportion.Software used in analysis was SPSS 22.0 version and GraphPad Prism 6.0 version and the findings were found out to be statistically significant. Male partners of the drug recipients were also examined and treated simultaneously and advised for follow up investigations and treatment for outcome appraisal. Incidence of vaginal trichomoniasis is increasing at an alarming rate in rural vidarbha region and there is no significant change in final outcome of recently prescribed treatment modules. Intervention strategies like public awareness campaign highlighting consequences of vaginal trichomoniasis in males and females and counselling of both partners are recommended at this juncture for better and bright future.

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INTRODUCTION

Trichomonas vaginalis is the most common curable sexually transmissible infection worldwide, with ~170 million to 190 million new cases each year (Purnima Madhivanan *et al.,* 2009). It has been estimated that this infection accounts for almost half of all curable sexually transmitted infections. The incidence of trichomoniasis is as high as 56% among patients attending STD clinics (Seema Sood and Arti Kapil, 2008). The actual burden of the disease remains unknown in India. Incidence figures are not reliable as facilities for diagnosis and treatment are inadequate.

Corresponding author: Dr. Rishu Y. Mishra,
Department of Pharmacology, DMIMS (DU), Jawahar Lal Nehru Medical College, Sawangi (M), Wardha India.

Only prevalence data are available from ad hoc surveys in population groups that are not necessarily representative of the total population. Although *T. vaginalis* is the most common cause of nonviral STD, the exact mechanism of its pathogenesis has not been clearly elucidated. Standard teaching is that trichomoniasis is an important cause of vaginitis in women. Trichomonal infection has been encountered in every continent and climate and has no seasonal variability. It has a cosmopolitan distribution and has been identified in all racial groups and socioeconomic strata.[2] It is as an important source of reproductive morbidity, a facilitator of HIV transmission and acquisition, and thus it is an important public health problem. Despite its importance in human reproductive health and HIV transmission, it is not a reportable disease and surveillance is not generally done. This

is problematic since most persons infected with TV are asymptomatic (Patricia Kissinger, 2015). Signs of infections in symptomatic women include vaginal discharge (42%), odor (50%), edema or erythema (22-37%), and colpitis macularis, i.e., strawberry cervix (a clinical sign). Other complaints may include dysuria and lower abdominal pain (Fule and Fule, 2012). Trichomoniasis is usually asymptomatic in males. Infection is also linked to preterm labour, prenatal morbidity and a two-fold increased risk of Human Immunodeficiency Virus acquistion.Thus, control of T. vaginalis infection is important in improving reproductive health of women, neonatal health and prevention of HIV/AIDS (Sumadhya *et al.,* 2012). The laboratory plays a key role in the diagnosis of this infection. Accurate diagnosis is essential, since it will lead to appropriate treatment and will facilitate the control of the spread of *T. vaginalis* infection. Diagnostic methods available for trichomoniasis are wet mount preparation, staining methods, culture in laboratory medium, cell culture, and molecular methods (Swapna Muthusamy and Selvi Elangovan, 2017). Papanicolaou (Pap) staining may be the most practical approach for the detection of asymptomatic infections as a large number of asymptomatic women undergo routine cytologic screening (Krieger *et al.,* 1988). For nearly four decades, metronidazole (MTZ) has been the treatment of choice for TV (Wendel and Workowski, 2017). MTZ is reported to have about a 95 % success rate in curing TV (Cudmore and Sarah, 2004).

The WHO and the United States Centers for Disease Control and Prevention (CDC) guidelines for treatment of TV include: MTZ or TNZ 2 gm single dose as the recommended regimens, and MTZ 400–500 mg BID 7 day dose as the alternative treatment regimen. Metronidazole can also be administered intravenously, with a dose of 500 mg to 2 g of metronidazole administered over 20 min. Intravenous administration, although rarely used, is associated with less severe side effects than oral dosing (Sarah *et al.,* 2004). Topical vaginal medications (creams and gels) and pessaries can be prescribed for the treatment of T. vaginalis in women (Sarah *et al.,* 2004). Modern preparations include clotrimazole, povidone-iodine, nonoxynol-9 and arsenical pessaries. Vaginal metronidazole creams and pessaries are available. There are no topical treatments for trichomoniasis in men (Sarah *et al.,* 2004). Cure rates for oral and intravenous regimens are similar, at 85 to 95%, and increase if the sexual partner(s) is treated simultaneously. Therefore, given the high incidence of asymptomatic trichomoniasis, concurrent treatment of sexual partner(s) is highly recommended to prevent recurrent infections (Sarah *et al.,* 2004).

Objective

The presented study was carried out to study the incidence of vaginal trichomoniasis aomong females of reproductive age group attending OBGY OPD at Acharya Vinoba Bhave Rural Hospital, Sawangi (Meghe), Wardha and to appraise different treatment modules prescribed.

MATERIALS AND METHODS

Type of study: A Hospital Based Observational Study

Locus of study: Acharya Vinoba Bhave Rural Hospital, J.N.M.C.,Sawangi (M), Wardha, Maharastra.

Study population: Patients of Obstetrics and Gynaecology Department, A.V.B.R.H, J.N.M.C., Sawangi (Meghe), Wardha

Sample size: 304

Duration of study: 1st January 2014 to 31th December 2016

Inclusion criteria

- Women willing to participate in the study.
- Diagnosed cases of Vaginal Trichomoniasis
- Age group : 15 - 45 Years

Exclusion criteria

- Women with other genital tract infections/diseases.

Statistical significance

Statistical significance was calculated by using z-test for single proportion.

Software used in analysis: SPSS 22.0 version and GraphPad Prism 6.0 version

Ethical clearance

The study was approved by the Institutional Ethical Committee. (Dated:25/01/2016)

MATERIALS AND METHODS

Step-1: Data collected from Medical record department
Step-2: In depth interview of unit heads, Associate professors, Assistant Professors and Junior residents of concerned department
Step-3: In depth Interview of patients attending OBGY OPD.

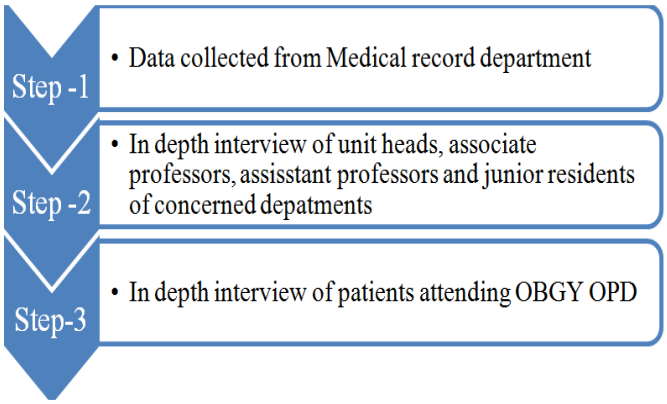
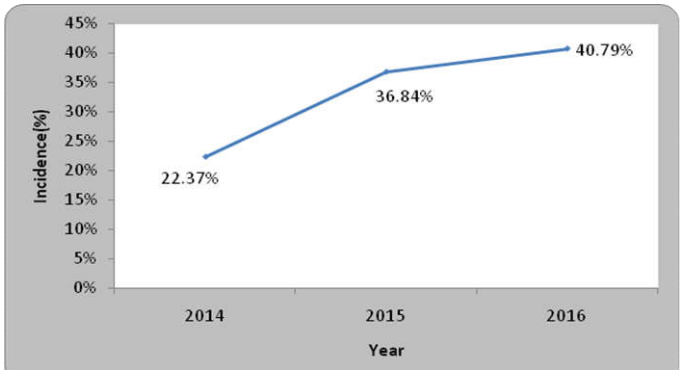


Figure 1.

RESULTS

Table 1. Incidence of Vaginal trichomoniasis (Year wise distribution in %)

Incidence (yearly)	2014	2015	2016
Percentage	22.37 %	36.84 %	40.79 %
Seasonal variation	-	64.68%	82.34%

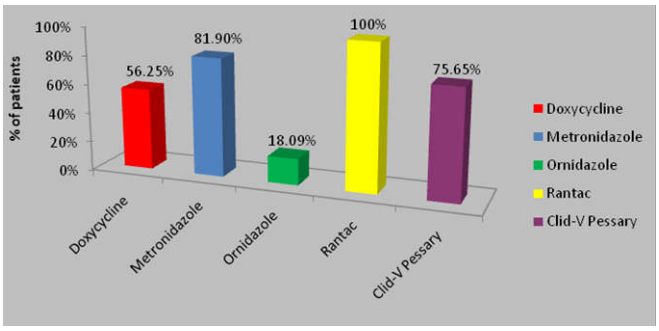


Graph 1. Incidence of Vaginal trichomoniasis (Year wise distribution in %)

Table 2. Percentage distribution of treatment modules

Treatment (Drug therapy)	In Percentage (%)	z-value
Doxycycline	56.25 %	19.77,S
Metronidazole	81.90 %	37.07,S
Ornidazole	18.09 %	8.19,S
Ranitidine	100.00 %	100,S
Clid - V Pessary	75.65 %	30.73,S

IF Z > 1.96, it is significant



Graph 2. Percentage distribution of Treatment modules

DISCUSSION

In the present study,out of 304 cases the incidence of trichomoniasis at A.V.B.R.H was 22.37% in year 2014,36.84% in 2015 and 40.79% in 2016,a finding inconsonance with studies carried out among similar populations in India.[1]According to Donbraye *et al*., the incidence of trichomoniasis is highest in women with multiple partners attending antenatal clinics in Zaria, Nigeria (Donbraye *et al.,* 2010). Donbraye *et al*. Also showed that 63% of their study subjects belonged to 20–29 years of age and most common age decade that showed *T. vaginalis* positivity is <20 years (Donbraye *et al.,* 2010). The study done by Jatau *et al*. showed that *T. vaginalis* infection is more common among 16–25 years age group followed by 26–35 years age group (Jatau *et al.,* 2006). In the present study participants belonged to reproductive age group (15 - 45 years). Among the participants, the incidence of trichomoniasis was highest in age group 36-45 years (51.31%) followed by age group 26-35 years (35.53%) and 15-25 years (13.16%). In the present study most commonly prescribed drugs were Doxycycline (56.25%), Metronidazole (81.90%), Ofloxacin+Ornidazole (18.09%), Clid-V Pessary (75.65%) and Ranitidine(100.00%). The study conducted by Preethi *et al* suggest the treatment of trichomoniasis is metronidazole, prescribed as a single 2 g oral dose or as a 7-day course of 500 mg b.i.d., with an expected cure rate of 90% (Preethi *et al.,* 2011). Similarly a study conducted by Seema *et al*, recommends that metronidazole regimens have resulted in cure rates of approximately 90-95%, and the recommended tinidazole regimen has resulted in cure rates of approximately 86-100% (Seema Sood, 2008). Health awareness, health education and health promotion programmes in relation to trichomoniasis should be organised periodically for both genders for better outcome of therapy.

Conclusion

Incidence of vaginal trichomoniasis is increasing at an alarming rate in rural vidarbha region and there is no significant change in final outcome of recently prescribed treatment modules. Given the public health implications of T. vaginalis infection in the mainstream reproductive age population, there is a need to rethink current public health policy on this easily treatable sexually transmitted diseases. Intervention strategies like public awareness campaign highlighting consequences of vaginal trichomoniasis in males and females and counselling of both partners are recommended at this juncture for better and bright future.

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