

Comparison Between Single Dose Versus Seven Days Metronidazole Therapy in Treatment of Trichomonas Vaginalis Vaginitis

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Objective: Comparison between single dose use of metronidazole versus seven days therapy in the treatment of trichomonas vaginalis infection. **Design and Setting:** A one year study from September 2002 to August 2003 conducted at Ghurki Trust Teaching Hospital attached with Lahore Medical & Dental College, Lahore. The total number of patients included are 109. **Main Outcome Measure:** Comparative treatment results of single dose versus 7 days therapy of metronidazole in treatment of trichomonas vaginalis. **Results:** 54 patients received metronidazole for 7 days. 51(94.44%) were free of infection. 3 did not respond to treatment and were retreated in the same way. 55 patients received 3 gm single dose treatment. 53% (96.36%) were free of infection while 3 patients required repeat treatment. **Conclusions:** Single dose treatment is an acceptable option with few side effects and better compliance.

Key words: Metronidazole, trichomonis, vaginalis

Vaginal discharge is a common complaint among females. The cause may be physiological or pathological. Trichomonas vaginalis is one of the most common organism which causes vaginitis in women.¹ It is found in approximately 50% of the patients who complain of vaginal discharge. Physiological discharge is usually clear or whitish in colour though some times irritation may be caused from a copious physiological secretion, but a marked increase in the volume of discharge accompanied with irritation suggests the presence of infection.

Trichomonas vaginalis is a unicellular protozoan. This flagellate parasite is ovoid in shape and in size little larger than a leucocyte. It measures 15-20 micron in length and 8-10 micron in breadth. It has four anterior flagellae and one axostyle which traverses its body and ends in a spike². In some individuals it is a harmless commensa³. Its role as a pathogen is now universally accepted.

This parasite is most commonly transmitted from male sexual partner⁴. He is a silent carrier of the parasite and usually does not have any symptoms. He carries the protozoan under the prepuce, in the urethra or prostate. Though normally the parasite is transmitted to the female partner during coitus this does not necessarily mean that trichomonas vaginalis is always venereal in origin, since it is also found in virgins, young girls and old women. Transfer of the organism from one individual to the other can also take place by indirect contact such as contaminated domestic towels, bed linen, personal clothing, improperly sterilized surgical instruments, bath tubs and possibly swimming pools are likely media of contacting infection.

Ill health, low resistance of the patient, altered flora of the vagina after taking antibiotics or sulphonamide and changed pH of the vagina are all responsible for the trichomonas vaginalis infection. The favourable pH for the growth of trichomonas vaginalis is 5.5-6.5 (normal pH of the vagina is 4.5-5.5). Other factors favourable for the development of trichomonal infection are local erosion resulting from chemical or mechanical trauma, neoplasia and other vaginal infections.

The presentation of trichomonas vaginalis is in the form of asymptomatic carries or active infection. The presence of the organism should always be confirmed. Currently following tests are available for determining the presence of vaginal trichomonas:-

1. Vaginal saline wet mount
2. Stained slide preparation (Papanicolaou smear)
3. Culture
4. Direct immuno fluorescence assay
5. Direct enzyme immunoassay
6. Latex agglutination test

All these methods are available for the diagnosis of trichomoniasis but they are not likely to replace the wet preparation in gynaecological practice since it is reasonably accurate, simple and an inexpensive procedure.

When inflammatory vaginitis exists in the absence of a positive wet preparation, then more sensitive diagnostic procedure i.e. culture method should be used because the patients without symptoms usually have a low level of trichomonas in the inoculum. Other tests like direct immuno fluorescence assay and direct enzyme immunoassay will have lower sensitivity level as compared to positive wet preparation. Culture on the other hand should identify if one of ten organisms are present in the initial specimen.

Treatment of Trichomoniasis

Local Preparation

Before the introduction of systemic metronidazole in 1960s trichomoniasis generally persisted throughout the reproductive life of women due to multifocal nature of the disease. Only local preparations were available which were primarily palliative. The symptoms were relieved but the cure was rare. Local medications used were surfactants, pH lowering agents and trichofuron but their therapeutic efficacy was not well defined, thus the success rate was only 20-40%.

Systemic Treatment (Metronidazole)

Standard treatment of metronidazole is one tablet (400 mg) x TDS for 7 days. Oral metronidazole therapy is curative in 85-90% cases and the figure rises to 95% if the patient's consort is treated simultaneously. Alternatively a single 2gms oral dose can be given. The efficacy has been confirmed in women⁵ but the efficacy reported in men is lower.⁶ It is easy to take and can be recommended in those patients who are reluctant to take medicines or who have nauseative feeling with the drug. The cure rate reported is 40% to 60%. This finding is not surprising because trichomoniasis is a multifocal infection involving the Skene's glands, the vaginal epithelium, the barthoin's gland and the urethra.

When metronidazole was first introduced, the cure rate was 95% but within two years of its introduction, resistant cases were reported throughout the world.

Treatment of Trichomoniasis in Pregnancy

It may be wise to rely on local treatment during first trimester whereas a single 2 gm dose may be acceptable in the second or third trimester if prenatal intervention is absolutely necessary and initial treatment attempt fails.

Cases Studied at Ghurki Trust Teaching Hospital

A total number of 109 patients with trichomonas vaginalis in vaginal smear were studied in outpatient department and gynae and obstetric unit of Ghurki Trust Teaching Hospital/ Lahore Medical and Dental College, Lahore during the period of September 2002 to August 2003.

Materials and Methods

1. Detailed history followed by physical examination
2. Papanicolaou smear was taken of every patient included in the study.
3. Saline wet preparations were made from the vaginal discharge of each patient of the entire study group.
4. Patients included in the study group were sexually active and were within the age bracket of minimum 18 years and maximum 42 years with the mean age of 29.09.
5. The patients were advised to abstain from coitus during their participation in the study.
6. Only those patients were included in the study who were positively available from day one till the completion of the study.
7. A written consent was obtained from all the participants of the study.

Vaginal secretions for microscopy were obtained with a cotton swab, which was placed in a tube containing 0.5 ml of 0.9% normal saline and a slide was prepared from a drop of the mixture. The samples were viewed under 100 magnification within 10 minutes of collection. In most cases a duplicate sample was evaluated by the clinical laboratory. A slide preparation was called positive if at least one

characteristically motile trichomonad was seen. The patients were divided in two groups and were randomized according to sealed envelopes.

1. 54 patients were given Tab. Metronidazole (Flagyl) 400mg 3 times a day for 7 days (total dose-8.4 gms).
2. 55 patients were given 5 tablets of metronidazole 400 mg in a single dose (total dose - 2gm).

Treated patients were seen again after one week. If the follow up examination was negative, repeat examinations were scheduled at 4, 8 and 12 weeks. Patients with a negative test on at least one of the follow up visits were considered cured.

When a positive test was found at any follow up examination, treatment was considered a failure and the patient was retreated according to their previous dosage regimen, either a repeat 2 gm dose of metronidazole or 400 mg 3 times daily for 7 days. In such patients where first repeat dose did not produce positive results, second/ third repeat dose was planned. It was made sure that all the patients have taken medicine regularly in proper doses and have followed the given instructions.

Results

The results of two different dosage regimens of metronidazole used in two separate groups formed out of total number of 109 patients for the evaluation of vaginal trichomoniasis were as follows:

Comparison of two different dosage regimens

Group	Group 1	Group 2
No. of patients	54	55
Regimen	400 mg x TDS x 7 days	2 gm single dose
Total dose	8.4gm	2.0gm
+ve results	51	53
-ve results	3	2
Percentage	94.44	96.36

In first group, 54 patients were given Tab. Metronidazole 400mg three times daily for 7 days. 51 patients (94.44%) were found free of infection. Three patients did not respond to the initial treatment however they were retreated with the same metronidazole regimen successfully.

In second group, 55 patients were given single dose of 2 gm metronidazole. 53 patients (96.36%) were free of infection where as two patients had failure of initial treatment. One patient was given a repeat dose of 2 gm x stat and the other patient was retreated with 2gm single dose + repeat 2 gm single dose of metronidazole. There were few side effects like nausea, emesis, dizziness and diarrhoea, however none of which were severe enough to interfere with the patient's ability to do normal routine work and both the retreated patients were free of infection.

Discussion

Vaginal infection of one type or another is responsible for a large proportion of gynaecological complaints, primary

symptom being discharge. Since there are so many causes of vaginal discharge therefore careful investigation of the same is always necessary. Among the common infecting organisms trichomonas vaginalis is one of the commonest infecting organisms.

Though the difference in the results is not much however it is evident that 2 gm single dose not only reduces total drug intake but has also produced better results.

Although resistant strains of trichomonas vaginalis have been reported but their occurrence in routine practice is rare. It is difficult to explain the apparent reasons of relative resistance to the treatment in patients in whom initial treatment failed and who were subsequently cured with repeated therapy. The failure of the treatment may be due to drug malabsorption, vaginal bacterial inactivation or lessened organisms susceptibility.

Trichomonas vaginalis infection has an inverse association with the educational status of women (Sardana S et al 1994). Simple hygienic precautions can reduce the risk of contracting the infection. Most recurrences in patients are secondary to reinfection or inadequate patient compliance with medication. If needed administer a similar dosage treatment and seek his cooperation in temporary use of condoms to avoid semen in the vagina which undoubtedly precipitates recurrences in many women. The need for providing proper counseling and education on sexual

behaviour and genital hygiene besides treatment to control and prevent these infections.

Conclusion

The study data supports the conclusion that the single 2gm metronidazole treatment for vaginal trichomoniasis is highly effective and can significantly reduce the patient non compliance. Its lower cost and simplicity can make its use more attractive to the patient's consorts and public health venereal disease control programs.

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