

## HAMYCIN IN THE TREATMENT OF VAGINITIS

by

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Leucorrhoea is the most common complaint of many women. It occurs in a third of all gynaecological cases. Its cause may vary from increased physiological secretion to serious local and systemic disease. In susceptible women it is likely to create a sense of insecurity, depression and even fear.

Trichomonas vaginitis and Monilial vaginitis are the most common causes of leucorrhoea.

Hamycin is a polyene antifungal antibiotic and belongs to the group, heptanene. It is produced by streptomyces pimprina thirum, an actinomycete isolated from the soil in Pimpri. It has been introduced by Thirumalachar Bhate and Menon in 1960. Its local application to the vagina is effective against both candida albicans and trichomonas vaginalis, in a concentration of 0.01 Micrograms/cc. Its value in oral thrush has been established by Anjaneyulu *et al*, (1961—a, 1961—b), and in monilial vaginitis by Leela Patel and Anjaneyulu (1966). Its value in trichomonas vaginalis has been established in vitro studies by Bhagwat

Gokhale, *et al*, (1964) and subsequently confirmed in clinical studies by Ganju and Anjaneyulu (1966).

The present study has been undertaken with a view to compare the efficacy of Hamycin with Flagyl, SVC and ITP vaginal pessaries in cases of trichomonas vaginitis and also to compare the efficacy with Mycostatin and ITP vaginal pessaries in cases of monilial vaginitis

### Material and Methods

7742 patients attending gynaecological Out Patient Department of Sassoon General Hospitals, Poona, from August 1967 to June 1970, were taken up for the study. Of these, 2580 were pregnant women and 5162 were non-pregnant women. These included patients who complained of leucorrhoea as their main complaint and on routine examination were found to have abnormal vaginal discharge. A detailed clinical history and thorough general and pelvic examinations were done in all cases.

Hanging drop preparation was made with normal saline and examined for trichomonas vaginalis and also mounted on a slide of 10% KOH for presence of hyphae and blastospores. With aseptic precautions the swabs were taken from the vagina and inoculated on to Sabouraud's glucose, agar, and peptone slants (with penicillin and streptomycin). The cultures were incubated at room tempe-

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perature for 4 days and examined for fungal growth.

Urine was examined for albumin, sugar and pus cells. Blood was examined for syphilis, and the cervical smear was stained by Gram's method for the evidence of gonococcal infection in suspected cases.

Cases that were found to be positive for trichomonas vaginalis were divided into four different groups. Patients who could afford to buy were put on Flagyl or SVC. The rest were treated with Hamycin, Mycostatin and ITP vaginal pessaries.

Patients were advised to abstain from coitus during the treatment. In all cases wet smears for trichomonas were repeated at the end of the course of the treatment. One week of treatment with Hamycin was taken as the base time for comparison with one week of treatment with Flagyl and 15 days treatment with SVC, and 10 days treatment with ITP in cases of trichomonas vaginitis. Similarly, one week of treatment with Hamycin was taken for comparison with 10 days of treatment with Mycostatin and ITP vaginal pessaries in cases of monilial vaginitis. The period of 6 months follow-up was taken as standard to assess the results

#### Observations

##### Incidence

Out of 7,742 cases examined, 971 cases (12.4%) were found to be positive for trichomonas vaginalis and 836 cases (10.79%) gave a positive culture for candida albicans. Mixed infection due to both candida albicans and trichomonas vaginalis occurred in 37 cases (0.49%).

TABLE I  
Incidence

Classification of cases	Number	Percentage
Trichomonas vaginitis	971	12.4 %
Monilial vaginitis	836	10.79%
Mixed i.e. both Trichomonas and Monilial vaginitis	37	0.49%

#### Results of Treatment

##### A. Trichomonas Vaginitis

###### Group I: Hamycin

Out of 971 cases, 192 were treated with Hamycin vaginal tablets. Each tablet contains 2 mgms. of the drug. Patients were instructed to insert the tablets twice a day into the vagina. One week of treatment was given. Fifty-eight patients who felt better symptomatically did not turn up again, thus leaving only 134 who took the full course of treatment and were followed up.

After one week of treatment 94 patients showed negative smears and the clinical picture also improved very much. The other 21 cases who showed a positive smear, had also considerable relief of pruritus and other symptoms. Thus with one week of treatment 115 patients had symptomatic cure (88.8%), while the smears were negative in 94 patients (72.37%). Twenty-one patients were given a further course of treatment. Of these 134 patients after one month, 120 cases came for follow-up. None of them had any symptoms and all showed a negative smear. After 3 months, 91 came for follow-up of which 83 patients showed a negative smear. Thus, the cure rate in the followed up cases was 91.2%. No adverse effects were observed during the course of treatment.

*Group 2: Flagyl*

One hundred and eighty-one patients were treated orally with Flagyl tablets. Three tablets (each 200 mgms.) were given daily after food for seven days. Of these only 103 patients came for follow-up or one month.

Of these 87 (84.46%) patients showed a negative smear, but symptomatic relief occurred in only 80 (77.7%) patients. Sixteen patients who showed a positive smear were given another course of treatment and all of them showed negative smears. After three months, 77 came for follow-up and 69 (89.61%) showed negative smears. Fifty-nine patients came for follow-up for 6 months or more and none had any relapse of symptoms. In all these cases the husbands of these patients were treated simultaneously with Flagyl. Thus the primary cure rate with Flagyl was 84.46%. Twelve (11.65%) patients had gastrointestinal symptoms after the treatment. Eight (7.76%) patients came with monilial infection during the course of treatment and follow-up. Before the start of treatment they gave negative cultures for candida albicans. These patients were treated with Hamycin vaginal pessaries with good results.

*Group 3: S.V.C. Vaginal Pessaries*

Each pessary contained Acetarsol B.P. 250 mgms. Patients were instructed to insert one pessary in the morning and one in the evening for two weeks. Although 269 patients were given the drug initially only 173 patients took the full course of treatment and came for follow-up.

After two weeks of treatment 113 (65.31%) showed a negative smear while symptomatic cure occurred in 90 (52.0%). All the 15 who showed a positive smear were given Hamycin and they responded to the treatment. Only 62 patients attend-

ed the clinic after 3 months. The smears were negative in 42 cases (67.75%).

No side effects were observed during treatment.

*Group 4: ITP Vaginal Pessaries*

ITP vaginal pessary contain Broxyquinoline 416.66 mgms. and Brobenzoxalidine 83.33% mgms. Patients were instructed to insert one pessary twice a day for 10 days.

Though initially 52 patients were treated, only 42 patients took the full course of treatment and came for follow-up. Of these, 30 patients (71.42%) had both symptomatic and smear cure. After one month 31 patients came for follow-up. Twenty-two (70.90%) patients had symptomatic and smear cure. After three months 37 came for follow-up. Twenty-six (70.27%) gave a negative smear.

No side effects were observed during the course of treatment.

*B. Monilial Vaginitis**Group 1: Hamycin*

Out of 836 cases that gave a positive culture for candidiasis 117 patients were treated with Hamycin and were followed-up. Symptomatic cure occurred in 96 (82.0%) cases while mycological cure occurred in 93 (79.48%) patients. The rest of the patients were given a second course of treatment. In all of them the culture was negative.

After 3 months, 6 pregnant patients came back for recurrence of symptoms. The rest of the patients during follow-up were found to be free from symptoms and the cultures were also negative. Even in those patients who gave a positive culture for candida, the in-vitro studies showed that they were sensitive to Hamycin. With another course of treatment they were completely cured.

There were no adverse side effects with local Hamycin vaginal pessaries.

**Group II: Mycostatin Vaginal Pessary**

Each pessary contains 100,000 units of nystatin. Patients were advised to put in one pessary twice a day for 10 days. Fifty-four patients were treated but only 35 patients took the full course of treatment and came or follow-up.

Twenty-four (68.59%) patients had relief of symptoms but 21 (60.%) patients showed a negative culture for candida. After three months 10 patients came for follow-up. Of these, 6 patients (60.0%) gave a positive culture for candida and they responded to a further course of treatment.

**Group III: ITP Vaginal Pessaries**

Out of the 100 patients treated, 79 patients took the full course of treatment and were followed-up. Symptomatic relief was obtained in 55 patients (69.62%) and culture cure in 46 patients (58.23%).

Sixty-eight patients came for follow-up after one month. Forty-three patients (63.23%) were cured symptomatically and 35 patients (51.47%) showed negative cultures. After three months 27 patients came for follow-up. Eighteen patients (66.66%) had symptomatic as well as culture cure.

No side effects were observed during the course of treatment.

**C. Treatment in Cases of Mixed Infection**

In-vitro studies show that both Hamycin and ITP vaginal pessaries are effective against both candida and trichomonas infections. Only these two drugs were compared in the treatment of mixed infections. Of the 37 cases, 10 cases were treated with Hamycin vaginal tablets and the remaining 27 were treated with ITP vaginal pessaries.

After one course of treatment they were followed-up for one month. Out of 10 cases treated with Hamycin in 8 cases

(80.0%) the smear for trichomonas was negative and the culture for candida infection was negative. Seventeen (62.49%) out of 27 treated with ITP vaginal pessaries also gave a negative smear and culture for both the infections. These patients subsequently did not turn up for follow-up.

**Discussion**

*Trichomonas Vaginalis Vaginitis:* The present study showed that the incidence of trichomonas vaginitis was 12.4%, and monilial vaginitis was 10.49%. These figures are much lower than 31.48% for trichomonas infection in non-pregnant cases and 16.6% in pregnant women (1966). Similarly the incidence of 10.49% for candida infection in the present series is less than the 12.5% in non-pregnant and 43.3% in pregnant cases. (Anjaneyulu *et al*, 1966). No proper explanation can be given for this low incidence.

The results have shown that in cases of trichomonas infection Hamycin compares favourably with SVC and also the ITP vaginal pessaries. (Table ii).

The primary cure rate with Hamycin after one week of treatment was 72.37% which increased to 73.13% with another course of treatment in cases that still showed positive smears for trichomonas vaginalis.

With 15 days of treatment Hamycin gave a cure rate of 87.7% in cases of trichomonas infection (Ganju and Anjaneyulu (1966).

The results with Flagyl (84.46%) are better than either with Hamycin SVC or ITP vaginal pessaries. Even so they are slightly inferior to the results obtained in our 1966 series. In Menon and Willmot's 1962 series a cure rate of 56.3% with Flagyl was observed. In Riddell and Stewart's series (1958) it was 83% in 52

TABLE II  
Comparative Study of Efficacy of Drugs in *Trichomonas Vaginitis*

Drug used	Days of Treatment	No. of cases	Symptomatic cure		Smear cure		Side effects
			No. of cases	%age	No. of cases	%age	
Hamycin	7	130	115	88.4%	94	72.37%	Nil
Flagyl	7	103	80	77.7%	87	84.46%	Nausea, Vomiting 11.65% Miniliasis 7.76%
SVC	15	173	90	52.02%	113	65.31%	Nil
ITP	10	42	30	71.42%	30	71.42%	Nil

patients and 56.8% in Watt and Jennison's series (1960 a, b).

In cases treated with Flagyl it is surprising to note that in 7 cases the patients still had symptoms in spite of the smear being negative. The persistence of symptoms was probably due to other causes like cervicitis producing leucorrhoea.

Side effects like nausea vomiting occurred in 12 (11.65%). Out of 115 cases, eight patients (7.76%) came with monilial infection during the course of treatment and follow-up.

The primary cure rate in cases treated with SVC vaginal pessaries was 65.31%. This also is lower than 92.37% reported before (1966). However, the results show that arsenical compounds with lactose base are still very effective trichomonidal agents.

ITP vaginal pessaries gave a primary cure rate of 71.42%. This compares fa-

vourably with Hamycin. Joshi and Bhatt (1968) reported a cure rate of 60.68% and Jungalwala & Kaushal (1970) gave a cure rate of 60.0% in trichomonas infection.

*Monilial Vaginitis:* The results have shown that Hamycin is definitely much superior to mycostatin or ITP vaginal pessaries in the treatment of monilial vaginitis. With only one week of treatment it gives a primary cure rate of 79.48% as compared with 60% with mycostatin vaginal pessaries and 58.23% with ITP vaginal pessaries. (Table iii).

Hamycin is 40 to 100 times more active in-vitro than Nystatin and hence 2 mgms. vaginal tablets have been more effective than 40 mgms. used in mycostatin.

Eleven patients came back with recurrence of symptoms and these responded to another course of Hamycin which

TABLE III  
Comparative Study of Efficacy of the Drugs in *Monilial Vaginitis*

Drug used	Days of Treatment	No. of cases	Symptomatic cure		Culture cure		Side effects
			No. of cases	%age	No. of cases	%age	
Hamycin	7	117	96	82.0%	93	79.48%	Nil
Mycostatin	10	35	24	68.59%	21	60.0%	Nil
ITP vaginal pessaries	10	79	55	69.62%	46	58.23%	

shows probably they were cases of reinfection.

Menon and Jehan 1959 reported a primary cure rate of 81.0% with Nystatin in monilial infection. Similarly, Satyavati reported 85%, Daftary *et al*, (1955) 79.0%, Jennison and Llywelyn Jones 88.0% (1953), cure rates with Nystatin. In the present series Nystatin gave a mycological cure of 60%.

ITP vaginal pessaries gave a primary cure rate of 58.23% in our cases. These figures are far lower than the results reported by others. Joshi, and Bhatt (1968) reported 62.5% cure rate in cases of monilial infection.

In cases (10) of mixed infection treated with Hamycin 8 cases (80%) responded to treatment whereas with ITP vaginal pessaries the cure rate was only 62.49%. Though the number is small, Hamycin seems to be more effective than ITP in mixed infections.

#### Summary and Conclusions

1. 7742 cases of leucorrhoea were examined for specific vaginitis.

2. The incidence of trichomonas infection was 12.4%, monilial vaginitis 10.49%, and mixed infections 0.49%.

3. Trichomonas vaginitis cases were treated with Hamycin, Flagyl, SVC and ITP vaginal pessaries.

4. The primary cure rate with Hamycin was 72.37%; with Flagyl, 84.46%; 65.31% with SVC; and 71.41% with ITP vaginal pessaries.

5. Hamycin compares favourably with SVC and ITP vaginal pessaries in trichomonas vaginitis.

6. Flagyl gave a better cure rate than other drugs. However, 12 (11.65%) cases suffered from gastrointestinal symptoms and in 8 cases (7.76%) candida infection developed after the course of treatment.

7. In cases of monilial infection, Hamycin gave a cure rate of 79.48% whereas with mycostatin and ITP the cure rate was 60% and 52.8% respectively.

8. Hamycin is also found to be more effective than ITP in cases of mixed infection due to trichomonas and candida infection.

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TABLE I  
Clinical features of vaginal candidiasis

Number of patients	Age group	Duration of illness	Site of infection
10	20-30	1-2 weeks	Vagina
10	30-40	1-2 weeks	Vagina
10	40-50	1-2 weeks	Vagina
10	50-60	1-2 weeks	Vagina
10	60-70	1-2 weeks	Vagina
10	70-80	1-2 weeks	Vagina
10	80-90	1-2 weeks	Vagina
10	90-100	1-2 weeks	Vagina
10	100-110	1-2 weeks	Vagina
10	110-120	1-2 weeks	Vagina
10	120-130	1-2 weeks	Vagina
10	130-140	1-2 weeks	Vagina
10	140-150	1-2 weeks	Vagina
10	150-160	1-2 weeks	Vagina
10	160-170	1-2 weeks	Vagina
10	170-180	1-2 weeks	Vagina
10	180-190	1-2 weeks	Vagina
10	190-200	1-2 weeks	Vagina
10	200-210	1-2 weeks	Vagina
10	210-220	1-2 weeks	Vagina
10	220-230	1-2 weeks	Vagina
10	230-240	1-2 weeks	Vagina
10	240-250	1-2 weeks	Vagina
10	250-260	1-2 weeks	Vagina
10	260-270	1-2 weeks	Vagina
10	270-280	1-2 weeks	Vagina
10	280-290	1-2 weeks	Vagina
10	290-300	1-2 weeks	Vagina
10	300-310	1-2 weeks	Vagina
10	310-320	1-2 weeks	Vagina
10	320-330	1-2 weeks	Vagina
10	330-340	1-2 weeks	Vagina
10	340-350	1-2 weeks	Vagina
10	350-360	1-2 weeks	Vagina
10	360-370	1-2 weeks	Vagina
10	370-380	1-2 weeks	Vagina
10	380-390	1-2 weeks	Vagina
10	390-400	1-2 weeks	Vagina
10	400-410	1-2 weeks	Vagina
10	410-420	1-2 weeks	Vagina
10	420-430	1-2 weeks	Vagina
10	430-440	1-2 weeks	Vagina
10	440-450	1-2 weeks	Vagina
10	450-460	1-2 weeks	Vagina
10	460-470	1-2 weeks	Vagina
10	470-480	1-2 weeks	Vagina
10	480-490	1-2 weeks	Vagina
10	490-500	1-2 weeks	Vagina
10	500-510	1-2 weeks	Vagina
10	510-520	1-2 weeks	Vagina
10	520-530	1-2 weeks	Vagina
10	530-540	1-2 weeks	Vagina
10	540-550	1-2 weeks	Vagina
10	550-560	1-2 weeks	Vagina
10	560-570	1-2 weeks	Vagina
10	570-580	1-2 weeks	Vagina
10	580-590	1-2 weeks	Vagina
10	590-600	1-2 weeks	Vagina
10	600-610	1-2 weeks	Vagina
10	610-620	1-2 weeks	Vagina
10	620-630	1-2 weeks	Vagina
10	630-640	1-2 weeks	Vagina
10	640-650	1-2 weeks	Vagina
10	650-660	1-2 weeks	Vagina
10	660-670	1-2 weeks	Vagina
10	670-680	1-2 weeks	Vagina
10	680-690	1-2 weeks	Vagina
10	690-700	1-2 weeks	Vagina
10	700-710	1-2 weeks	Vagina
10	710-720	1-2 weeks	Vagina
10	720-730	1-2 weeks	Vagina
10	730-740	1-2 weeks	Vagina
10	740-750	1-2 weeks	Vagina
10	750-760	1-2 weeks	Vagina
10	760-770	1-2 weeks	Vagina
10	770-780	1-2 weeks	Vagina
10	780-790	1-2 weeks	Vagina
10	790-800	1-2 weeks	Vagina
10	800-810	1-2 weeks	Vagina
10	810-820	1-2 weeks	Vagina
10	820-830	1-2 weeks	Vagina
10	830-840	1-2 weeks	Vagina
10	840-850	1-2 weeks	Vagina
10	850-860	1-2 weeks	Vagina
10	860-870	1-2 weeks	Vagina
10	870-880	1-2 weeks	Vagina
10	880-890	1-2 weeks	Vagina
10	890-900	1-2 weeks	Vagina
10	900-910	1-2 weeks	Vagina
10	910-920	1-2 weeks	Vagina
10	920-930	1-2 weeks	Vagina
10	930-940	1-2 weeks	Vagina
10	940-950	1-2 weeks	Vagina
10	950-960	1-2 weeks	Vagina
10	960-970	1-2 weeks	Vagina
10	970-980	1-2 weeks	Vagina
10	980-990	1-2 weeks	Vagina
10	990-1000	1-2 weeks	Vagina