

‘ONE DOSE’ TREATMENT OF ACUTE GONORRHOEA WITH SPIRAMYCIN (ROVAMYCIN)

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A major breakthrough in the treatment of gonorrhoea was achieved when penicillin was introduced during World War II. It was then predicted that the two major venereal diseases—gonorrhoea and syphilis—ultimately would be eradicated. This optimistic forecast appeared to be justified as the incidence of these venereal diseases steadily declined on a global basis by 1957. However, an abrupt reversal of the downward trend developed since 1958, involving both syphilis and gonorrhoea. The deplorable world-wide resurgence of venereal diseases, particularly of gonorrhoea, is perhaps attributable to the emergence of strains of *N. gonorrhoeae* resistant to penicillin as also due to diminished use of penicillin because of the increasing incidence of anaphylactic reactions, associated with the administration of this antibiotic.

In view of these limitations on the use of penicillin in the treatment of gonorrhoea (with or without syphilitic infection), other antibiotics are now being employed. Streptomycin, which was once upon a time used for its sparing effects on syphilis, is now-a-days no longer used because of its less powerful antigonorrhoeal action. Comparatively, tetracyclines are more frequently employed in doses of 500 mg, orally every 4 to 6 hours for several days. Faced with this situation, we undertook a search on the medical literature with a view to find a suitable chemotherapeutic agent which :

- (a) will be active against gonococci,
- (b) would require less frequent administration, preferably orally and once a day, and
- (c) should have a sparing effect on syphilis.

‘Rovamycin’ brand spiramycin is a narrow-spectrum antibiotic and is active, on oral administration, against gonococci; this antibiotic produces high tissue levels which are maintained for more than twenty-four hours.²

The efficacy of spiramycin against *N. gonorrhoeae* has been evaluated extensively; the work of *Siboulet and Egger*³ prompted us to undertake this trial of spiramycin, using massive single dosage for the management of acute gonococcal urethritis, seen at the V.D. Training and Demonstration Centre at the Safdarjang Hospital, New Delhi.

Material and Methods

Twenty-three cases of acute gonococcal urethritis were studied in this series (see Table I). The cases were diagnosed clinically and the history of ‘exposure’ was available in all the cases. The clinical diagnosis was confirmed by usual microscopical examination of the smear of the discharge by Gram stain. Besides, all the patients were subjected to the serological tests for syphilis (STS); cases that were STS-negative were included in the trial. Every case was followed up for three months. Culture study of the discharge from urethra was not undertaken. Wives of

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Received for Publication on 7-4-1972

TABLE I
Distribution of the cases in different age group

Age group	No. of Patients (All male)
0-5 years	—
16-20 years	5
21-25 years	7
26-30 years	5
31-40 years	6
41 and above	—
Total	23

six patients out of 23 were found to be suffering from gonorrhoea and were treated with 'Rovamycin' successfully but not included in the trial.

Once the clinical diagnosis of acute gonococcal urethritis was confirmed by laboratory investigation, the patients were made to swallow ten capsules of 'Rovamycin' (2.5 G.) at once in the presence of the Staff Nurse.

The cases were divided into different socio-economic and educational strata (see Table II).

TABLE II
Distribution of the patients according to the educational qualification

Educational Standard	No. of Patients (All male)
Uneducated	—
Primary	3
High School	14
College	6
Total	23

After the administration of 'Rovamycin' capsules, the patients were seen again after 48 hours i.e. on the third day; some of them reported next day also. They were examined for any urethral discharge. Whenever urethral discharge was seen, it was examined microscopically for gonococci; on first follow-up urine was also examined,

both macroscopically and microscopically. A second course of single dose was used in two patients who persistently showed positive bacteriological results.

Results and Observations

Out of 23 cases urethral discharge persisted till third day in 2 who responded to a second course of single dose of 'Rovamycin'; five cases showed no response with 'Rovamycin'. These five cases were labelled as 'Failure'. Eighteen cases were followed up clinically and serologically for three months and were found to be negative. Table III indicates the time taken for the disappearance of urethral discharge and also the reappearance of the discharge.

TABLE III
Showing time interval for the urethral discharge to disappear/reappear

Days after Treatment	No. of Patients Discharge-free
Next Day	21
3rd Day	21
5th Day	18
7th Day	18
15th Day	18
One month	18
Two months	18
Three months	18

As it would be seen from the above table, eighteen patients, who could be followed up for three months, were free from urethral discharge. Five patients showed reappearance of urethral discharge and were therefore considered as failures to treatment. It was, therefore observed that the majority of the cases

- were in the age group of 16 to 30 years (17 out of 23 cases),
- belonged to low income group with monthly income varying between Rs. 101 and Rs. 200 (15 cases),
- had low educational standard, i.e. upto matriculation (14 - High School and 3 primary),

- (d) the urethral discharge disappeared in 21 cases on the next follow-up i.e., 3rd day; 2 cases persistently showed urethral discharge with positive smear on 3rd day. Later on, they received a second course of 10 capsules of 'Rovamycin' for complete bacteriological and clinical cure. However, at the conclusion of the trial 5 out of 23 patients showed relapse of the urethral discharge with positive smear examination and were labelled as *failures*. Our enquiries revealed that wives of these 5 patients were not treated. On follow-up for three months, 18 cases were completely cured on the basis of clinical and bacteriological examinations.
- (e) 'Rovamycin' was well tolerated and no side-effects or toxic reactions were observed with 2.5 G. spiramycin.

Discussion

The earliest report on the value of 'Rovamycin' in acute gonococcal urethritis was that by Willcox⁴. 31 previously untreated cases of acute gonorrhoea received a total dosage of 4-13 gms. of spiramycin in daily divided doses. Only one gonococcus-persistent failure was detected on follow-up and was believed to be a reinfection. 54 similar cases received similar doses of 2, 3 and 4 gms. respectively and, only with the smallest dose was the percentage of cure unsatisfactory.

Sylvestre and Ethier⁵ described their results obtained in 36 male patients with gonococcal infection using 'Rovamycin'. These patients received a total of 4.5 G. spiramycin in divided doses and were seen again on the following day and at regular intervals of about 10 days. There were only 2 failures with this dose and the reactions were minimal (2 cases of diarrhoea being noted).

In the field of single dose therapy with 'Rovamycin' for gonorrhoea, the contribution by Siboulet and Egger³ is phenomenal. They treated 10,000 cases of gonococcal urethritis over a period of 45 months and reported a 95 per cent cure rate following treatment with a single dose of 2.5 G. of spiramycin or a single intramuscular injection of 2.5 million units of penicillin. In their discussion of the relative value of the two treatments the authors drew attention to the fact that

- (a) it was easy to administer spiramycin; and
- (b) that it did not mask syphilis.

In this series, 23 cases were followed up for three months. Out of these cases, 18 patients required a single dose of 10 capsules of 'Rovamycin' for complete clinical and bacteriological cure. Out of these 18 cases again 2 cases which showed positive smear on the 3rd day were given a repeat single dose of 10 capsules of 'Rovamycin' and were cured clinically and bacteriologically. Of the 5 cases which failed to respond to the single dose of 'Rovamycin', it was learnt that their wives were not available for treatment. They were therefore, not given a repeat single dose as their female partners could not be treated.

Repeated investigations of urethral smear coupled with clinical examination were the criteria of improvement/cure. It was noted that

- (a) the incidence of infection was more common in the younger age groups (21-23 years-7 cases),
- (b) in patients with high school education (14 cases), and
- (c) in low income group (monthly income of Rs. 100/- to Rs. 200/-, 9 cases).

Only 6 female partners could be examined and were found harbouring gonococci; they were successfully treated with 'Rovamycin', but are not included in this report.

Summary and Conclusion

1. 23 cases of acute gonococcal urethritis, confirmed by smear examinations, were included in the trial. Wives of 6 cases only were available for examination and treatment. In treatment of gonorrhoea consorts should also be treated simultaneously.
2. 10 capsules of 'Rovamycin' (2.5 G. of Spiramycin) were given in single dose in all the cases; only 2 cases who persistently showed gonococci in urethral smear were given a repeat single dose after 10 days.
3. Follow-up studies - clinical and bacteriological examinations were done periodically for three months in all the patients.
4. 18 cases responded to the single dose therapy with 'Rovamycin' while 5 cases were labelled as *failures* because recurring urethral discharge with the presence of gonococci in follow-up urethral smear examinations; as their consorts were not available for examination no repeat treatment was given lest re-infection will continue to vitiate the results.
5. A single dose of 10 capsules of 'Rovamycin' was well accepted and tolerated by the patients as no side effects or toxic reactions were seen.
6. Though this series is too small to draw a definite conclusion, yet it clearly indicates that spiramycin is, indeed, effective in a single dose of 10 capsules in curing acute gonococcal urethritis.
7. The therapy with 'Rovamycin' for the management of gonorrhoea is an added advantage because of the following :
 - (a) ease of administration.
 - (b) on-the-spot treatment of acute gonococcal urethritis which eliminates the chances of missing the doses if the same drug i.e. 'Rovamycin' is used in divided doses.
 - (c) 'Rovamycin' dose not mask syphilis.
8. It is, therefore, concluded that in author's opinion, single dose treatment of 'Rovamycin' is better and safer, in comparison to treatment with penicillin.

Acknowledgment

My thanks are due to Medical Superintendent, Safdarjang Hospital and May & Baker (India) Private Ltd., for supplies of 'Rovamycin' brand spiramycin capsules. My thanks are also to the staff of the V.D.T.C.

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