

## ACUTE GONORRHOEA TREATED WITH TETRACYCLINES

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M. RAMACHANDER AND K. V. RAMAMURTY

There was considerable decrease of Gonorrhoea after the II<sup>nd</sup> World War. This is due to the effectiveness of Penicillin which became abundantly available in the post war period for chemotherapy. This led to the wishful thinking that Gonorrhoea may be eliminated and the problem of gonococcal infection may be solved for all time to come, in a couple of years by intensive contact tracing and treatment of infected cases. These hopes were later observed to be ill founded as there was an alarming increase of gonorrhoea throughout the world including the so called "iron curtain" countries.

Various factors have been incriminated as responsible for the unfortunate upward trend in the incidence of Gonorrhoea, namely (1) Immigration (2) Homosexuality (3) Infection in Teenagers (4) Reservoirs of infection in women (5) Prostitution (6) Reinfection and (7) Treatment failure.

In this paper the treatment aspect only will be considered. The first chemotherapeutic agent sulphonamide was used in the treatment of gonorrhoea in 1937 by Dees and Coleston and found to be effective in 90% of the cases but by 1946, 90% of the cases of gonorrhoea became resistant to sulphonamides. The discovery of penicillin and its introduction for chemotherapy was providential and the sulphonamides were virtually abandoned in the treatment of gonorrhoea.

Gonococcus was one of the most susceptible organisms to penicillin therapy. Very low dose of penicillin effected cures in gonorrhoea. In 1954 penicillin cured gonorrhoea, virtually in 100% of cases. Doses as low as 150,000 to 300,000 units of PAM was sufficient to cure gonorrhoea. As in the case of other chemotherapeutic agents so also with penicillin, the percentage of cures decreased gradually and larger doses were necessary for the same therapeutic effect. Now the standard therapy for acute gonorrhoea is to give 1.2 to 2.4 Mega units of P.A.M. or Benzathine Penicillin. By 1966 even this high dosage failed to cure 13% of cases of gonorrhoea and in the western countries by 1970 the percentage of cases resistant to penicillin therapy has gone up to 44%. This is partly due to the fact that penicillin is being indiscriminately used from common cold to cancer. The senior author in a recent article "Gonorrhoea-Treated with I.V. Penicillin" has shown that the resistance of Gonococci to penicillin is more relative than real. Gonorrhoea now requires much higher concentration for longer period than 1 unit of penicillin in 1 cc of blood for not less than 24 hours which was considered sufficient before. Moreover more and more patients are becoming sensitive to penicillin and some times resulting in fatal anaphylactic shock. Hence alternative and equally effective drugs are becoming increasingly necessary in the treatment of gonococcal infection.

This paper relates to the treatment of acute gonorrhoea by single dose oral therapy of various brands of Tetracycline undertaken in the V.D. Clinic of the

Government General Hospital, Guntur. The advantage of single dose oral therapy is that the patient takes the drug under the direct supervision of the physician. This avoids the idiosyncracies of the patients and the pitfalls inherent in taking the drugs in the multiple dose therapy.

Four drugs were tried in this study namely (1) Spiramycin (Rovamycin of May & Baker Co.), (2) Demethyl chlor tetracycline (Ledermycin of Lederle Co.), (3) Tetracycline Hcl (Hostacycline 500 of Hoechst Co.), and Tetracycline Hcl with Ascorbic acid (Resteclin of Squibb Co.)

#### Method of Study :

After confirming the diagnosis by laboratory investigations each patient

was given 10 capsules under the supervision of the physician. 20 cases were studied for each drug. The patients were followed up daily for 3 consecutive days and once a week for 3 consecutive weeks.

#### Criteria for Cure :

Before the sulphonamide era, the criteria for cure covered a minimum period of 3 months. This time has been reduced for a post treatment observation for 3 weeks which we think is sufficient and convenient. At any time within a period of 3 weeks of post-treatment, gonococci were demonstrated, the case was considered as a treatment failure. The details of the cases are given below.

TABLE I—Cases treated with Spiramycin (Rovamycin)  
250 Mgm. 10 Capsules Single Dose

S.No.	Code No.	V.D.R.L.	Results
1	M.V. 4182/70	Negative	Cured
2	M.V. 4652/70	Negative	Cured
3	M.V. 4657/70	Negative	Failure
4	M.V. 4685/70	Negative	Cured
5	M.V. 4711/70	Negative	Cured
6	M.V. 4720/70	Positive 2 Dils	Cured
7	M.V. 4721/70	Negative	Cured
8	M.V. 4767/70	Negative	Cured
9	M.V. 4810/70	Negative	Cured
10	M.V. 4910/70	Negative	Cured
11	M.V. 4969/70	Negative	Cured
12	M.V. 4994/70	Negative	Cured
13	M.V. 4995/70	Negative	Cured
14	M.V. 5002/70	Positive 4 Dils	Cured
15	M.V. 5044/70	Negative	Failure
16	M.V. 5093/70	Positive 4 Dils	Cured
17	M.V. 5108/70	Negative	Cured
18	M.V. 5118/70	Negative	Cured
19	M.V. 5141/70	Negative	Cured
20	M.V. 5144/70	Positive 16 Dils	Cured

Table I shows that among the 20 cases treated with Spiramycin there were 2 treatment failures giving a cure rate of 90%. All cases were males.

TABLE II

Cases treated with Demethyl Chlor Tetracycline (Ledermycin)  
150 Mg. 10 capsules single Dose

S.No.	Code No.	V.D.R.L.	Results
1	M.V. 4852/70	Positive 8 Dils	Cured
2	M.V. 4886/70	Positive 8 Dils	Failure
3	F. V. 71/71	Negative	Cured
4	F. V. 72/71	Negative	Cured
5	F. V. 133/71	Negative	Cured
6	M.V. 287/71	Negative	Cured
7	M.V. 508/71	Negative	Cured
8	M.V. 533/71	Negative	Cured
9	M.V. 564/71	Negative	Cured
10	M.V. 643/71	Negative	Cured
11	M.V. 770/71	Negative	Cured
12	M.V. 779/71	Negative	Cured
13	M.V. 845/71	Negative	Cured
14	M.V. 901/71	Negative	Cured
15	M.V. 947/71	Negative	Cured
16	M.V. 961/71	Negative	Cured
17	M.V. 963/71	Negative	Cured
18	M.V. 967/71	Negative	Cured
19	M.V. 974/71	Negative	Cured
20	M.V. 1034/71	Negative	Cured

Table II shows that among the 20 cases 3 were females and 17 were males. There was one treatment failure in 20 cases treated with Demethyl chlor Tetracycline giving a cure rate of 95%.

TABLE III

Cases treated with Hostacycline 500 (Tetracycline Hydrochloride)  
500 Mg.m. 5 Dragees single Dose

S.No.	Code No.	V.D.R.L.	Results
1	M.V. 3054/70	Negative	Cured
2	M.V. 5157/70	Negative	Cured
3	M.V. 5234/70	Negative	Cured
4	M.V. 5250/70	Negative	Cured
5	M.V. 5274/70	Negative	Cured
6	M.V. 5288/70	Negative	Cured
7	M.V. 5292/70	Negative	Cured
8	M.V. 5298/70	Negative	Cured
9	M.V. 5328/70	Negative	Cured
10	M.V. 5333/70	Negative	Cured
11	M.V. 5338/70	Negative	Cured
12	M.V. 5374/70	Negative	Cured

13	M.V. 5384/70	Positive 8 Dils	Cured
14	M.V. 5444/70	Negative	Cured
15	M.V. 4648/70	Positive 2 Dils	Cured
16	M.V. 5770/70	Positive 8 Dils	Cured
17	M.V. 5929/70	Negative	Cured
18	M.V. 6131/70	Positive 2 Dils	Cured
19	F. V. 24/71	Negative	Cured
20	M.V. 245/71	Negative	Cured

Table III shows among the 20 cases treated with Hostacycline 19 were males and one female. All the 20 cases were cured giving a cure rate of 100%.

TABLE IV

Treated with Tetracycline Hydrochloride with Ascorbic Acid (Resteclin)  
250 Mgm. 10 Capsules single Dose

S.No.	Code No.	V.D.R.L.	Results
1	M.V. 1646/71	Negative	Cured
2	M.V. 1659/71	Negative	Cured
3	M.V. 1677/71	Negative	Cured
4	M.V. 1710/71	Negative	Cured
5	M.V. 1751/71	Negative	Cured
6	M.V. 1868/71	Negative	Cured
7	M.V. 1869/71	Negative	Cured
8	M.V. 1914/71	Negative	Cured
9	M.V. 1924/71	Negative	Cured
10	M.V. 3095/71	Positive 2 Dils	Cured
11	M.V. 3390/71	Negative	Cured
12	M.V. 3400/71	Negative	Cured
13	M.V. 3642/71	Negative	Cured
14	M.V. 4042/71	Negative	Cured
15	M.V. 4385/71	Negative	Cured
16	M.V. 4463/71	Negative	Cured
17	M.V. 5194/71	Negative	Cured
18	M.V. 5324/71	Negative	Failure
19	M.V. 5325/71	Negative	Failure
20	M.V. 5333/71	Negative	Cured

Table IV shows that the 20 cases treated with Tetracycline Hcl (Resteclin) 18 cases were cured giving a cure rate of 90%. All the cases were males.

### Summary :

1. In our study under review 80 cases of acute Gonorrhoea were treated by a single dose oral therapy with Tetracyclines. There were 20 cases in each drug group.

2. 10 capsules of each drug was given to the patients under the direct supervision of the physician.

3. The patients were followed up daily for 3 consecutive days and thereafter once a week for 3 weeks.

4. If at any time gonococci were demonstrated within the 3 weeks of post treatment period, the case was considered as a failure.

5. With Spiramycin (Rovamycin) there were 18 cures and 2 failures giving a cure rate of 90%.

6. With Demethyl chlortetracycline (Ledermycin), there were 19 cures and one failure giving a cure rate of 95%.

7. With Hostacycline 500 (Tetracycline Hydrochloride) all the 20 cases were cured giving a cure rate of 100%.

8. With Tetracycline Hcl with Ascorbic acid (Resteclin), there were 18 cures and 2 failures giving a cure rate of 90%.

9. There were no reactions or any untoward effects in any of the cases treated.

### Conclusions :

With increasing resistance of gonococci to penicillin and more and more patients becoming sensitive to penicillin, alternative chemotherapy which should be easy to administer and give a fairly high cure rate is a desideratum.

In our study, out of the four drugs used Hostacycline 500 (Tetracycline Hydrochloride) has given a 100% cure and appear to be a very satisfactory drug.

We feel that 20 cases in each group are rather a small number and more number of cases should be tried to form a more accurate idea regarding the per-

centage of cures. However, a comparative study of this nature will form a guideline to follow whenever the necessity to use an alternative drug in the treatment of gonorrhoea arises, although penicillin is still the drug of choice in the treatment of gonorrhoea. Although Hostacycline 500 (Tetracycline Hydrochloride) is the best drug in our trial, the other drugs namely Spiramycin (Rovamycin), Demethyl chlor tetracyclin (Ledermycin), and Tetracycline Hcl (Resteclin) have given fairly good results and have a definite place in the treatment of gonorrhoe. All the cases with positive serology were given a course of antisyphilitic treatment.

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### REFERENCE

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