

RESEARCHES IN NON-SPECIFIC URETHRITIS

II. TREATMENT*†‡

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The present paper compares the results obtained with a number of drugs given alone without local measures, in the treatment of non-specific urethritis. The orally administered antibiotics, terramycin, aureomycin, and chloramphenicol, were all tried as well as streptomycin and sulphonamides. Penicillin has generally been stated to be ineffective in non-specific urethritis, but this antibiotic was used in a series of 85 cases to assess its relative ineffectiveness. The basic data of the cases treated are given in Table I.

TABLE I
PARTICULARS OF 460 CASES TREATED

Drug	Dose	No. of Cases Treated	Previous Treatment	
			Yes	No
Sulphonamides..	4 g. daily for 5-7 days	75	20	55
Penicillin ..	3-4 daily injections 600,000 units PAM	85	15	70
Streptomycin ..	2-4 daily injections 1 g.	103	41	62
Chloramphenicol	1 injection 2-4 g. (11) 4 g. or less orally (11) 5 g. or over orally (43)	65	29	36
Aureomycin ..	4 g. or less orally (14) 5 g. or over orally (48)	62	29	33
Terramycin ..	4 g. or less orally (7) 5 g. or more orally (63)	70	25	45
Totals		460	159	301

The general picture of the results obtained is set out in Table II. In this and the following tables the drugs concerned are arranged in descending order of effectiveness.

Table III excludes patients who had no follow-up. The order of effectiveness remains the same.

To allow for differences in the duration of follow-up, the failure rates have been cumulated in a manner similar to that frequently used in the

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‡ Part I concerns the aetiology of non-specific urethritis (Willcox, 1954).

TABLE II
COMPARISON OF RESULTS EXPRESSED AS PERCENTAGE OF CASES TREATED, IRRESPECTIVE OF DOSE, FOLLOW-UP, OR PREVIOUS THERAPY

Drug	No. of Cases Treated	Failed within 3 mths	Percent. Failed
1. Terramycin	70	14	20.0
2. Aureomycin	62	16	25.8
3. Chloramphenicol ..	65	23	35.4
4. Sulphonamides	75	27	36.0
5. Streptomycin	103	40	38.8
6. Penicillin	85	36	42.4
Total	460	156	33.9

TABLE III
COMPARISON OF RESULTS EXPRESSED AS PERCENTAGE OF CASES FOLLOWED-UP, IRRESPECTIVE OF DOSE OR PREVIOUS THERAPY

Drug	No. of Cases Followed	Failed within 3 mths	Percent. Failed
1. Terramycin	70	14	20.0
2. Aureomycin	60	16	26.7
3. Chloramphenicol ..	63	23	36.5
4. Sulphonamides	72	27	37.5
5. Streptomycin	95	40	42.1
6. Penicillin	80	36	45.0
Total	440	156	35.5

presentation of the results of anti-syphilitic therapy. This method makes the basic assumption that patients not followed at a particular time have the same fate as those that are. This condition does not necessarily pertain for non-specific urethritis, which usually gives rise to symptoms which will bring relapsing patients back to the clinic, whereas many failures to anti-syphilitic treatment are latent cases, unsuspected by the patient and only detected by a serum test. A patient suffering from non-specific urethritis who does not attend after treatment is therefore more likely to be cured than a syphilitic. However this method is a very convenient one for comparative purposes.

No effort has been made to distinguish relapses from re-infections during the first 3 months post-

treatment, but recurrences *after* 3 months from treatment are automatically assumed to be re-infections and are excluded from the assessment. As a symptom-free period of 3 months (with suitable tests) has for a long time been commonly accepted as a criterion of cure for non-specific urethritis following treatment with sulphonamides, and any extension of this time following treatment with antibiotics has been concerned more with the risk of masked syphilis than with the possibility of uncured urethritis, it is considered that this arrangement is reasonable and fair.

It was noted that the failure rates were significantly higher in previously treated persons than in those undertaking treatment for the first time. The figures, therefore, will be considered separately under these headings (Table IVA).

For the previously treated cases the numbers are smaller, and the comparison in consequence less reliable (Table IVB).

TABLE IV
CUMULATIVE RE-TREATMENT RATES AT THREE MONTHS
IRRESPECTIVE OF DOSE

Previous Treatment	Drug	No. of Cases Treated	Failed	Cumulative Percent. Failed by 3 mths
(A) Cases not previously treated	1. Terramycin	45	5	12.9
	2. Aureomycin	33	6	25.1
	3. Chloramphenicol	36	12	43.7
	4. Penicillin	70	26	53.3
	5. Streptomycin	62	22	53.8
	6. Sulphonamides	55	21	63.7
(B) Cases previously treated	1. Sulphonamides*	20	6	40.0
	2. Terramycin	25	9	46.2
	3. Chloramphenicol	29	11	51.4
	4. Aureomycin	29	10	63.3
	5. Streptomycin	41	18	71.9
	6. Penicillin	15	10	104.1

*It should be noted that none of the cases receiving sulphonamides had previously received any of the oral antibiotics. These drugs would probably have been less successful had the reverse been the case.

Thus, in the previously untreated cases, terramycin proved the superior drug, and aureomycin second best. Sulphonamides were the least effective, with streptomycin and penicillin only slightly better. All drugs gave a poor showing in the previously treated cases, but terramycin and the sulphonamides were the best, and streptomycin and penicillin the least successful.

In Tables I-IV the results have been expressed irrespective of the dose given. The patients receiving streptomycin, penicillin, and the sulphonamides received relatively constant doses, whereas those receiving the oral antibiotics did not (Table I). In Table V, therefore, the results obtained with streptomycin, penicillin, and the sulphonamides are compared with those obtained by giving

TABLE V
COMPARISON OF CUMULATIVE RE-TREATMENT RATES
OF PATIENTS NOT PREVIOUSLY TREATED RECEIVING
5-6 g. OF THE ORAL ANTIBIOTICS

Drug	Cases Treated	Failed within 3 mths	Cumulative Percent.
1. Terramycin	25	4	19.4
2. Aureomycin	25	5	25.3
3. Chloramphenicol ..	15	4	30.5
4. Penicillin	70	26	53.3
5. Streptomycin	62	22	53.8
6. Sulphonamides ..	55	21	63.7

5-6 g. of each of the oral antibiotics. In this analysis, only previously untreated patients are considered.

The failure rates (not cumulative) following treatment of the previously treated cases, including re-treatment, with the various drugs, are summarized in Table VI.

TABLE VI
FAILURE RATES PERCENT. IN PATIENTS PREVIOUSLY
TREATED, SHOWING DRUGS USED, INCLUDING RE-
TREATMENTS

Drugs Given at Re-treatment	Drugs Given at First Treatment					
	Terra- mycin	Aureo- mycin	Chlor- amphen- icol	Strepto- mycin	Peni- cillin	Sulpho- namides
Terramycin ..	33.3	25.0	44.4	33.3	50.0	33.3
Aureomycin ..	66.6	55.5	100.0	35.7	57.1	31.2
Chloramphenicol	75.0	100.0	63.2	33.3	37.5	46.1
Streptomycin ..	—	100.0	50.0	75.0	38.5	44.8
Penicillin ..	—	—	—	66.6	—	58.3
Sulphonamides..	—	—	—	27.3	30.0	—

Thus in patients having previously failed with terramycin, aureomycin, or chloramphenicol, terramycin was found to be superior to aureomycin, chloramphenicol and streptomycin. There was little to choose between the oral antibiotics and the sulphonamides, for those who had failed with streptomycin. The sulphonamides proved the best for those who had failed with penicillin. Terramycin and aureomycin were the most successful drugs for those who had failed with the sulphonamides.

Summary

(1) Sulphonamides, penicillin, streptomycin, chloramphenicol, aureomycin, and terramycin were used in the treatment of 460 cases of non-specific urethritis.

(2) Whether judged by the number of cases treated or by the number of cases followed, irrespective of dose, follow-up, or previous therapy, or by the cumulative re-treatment rates at 3 months

in previously untreated cases, the three most successful drugs were terramycin, aureomycin, and chloramphenicol—in that order. In a strict comparison of these three antibiotics, in doses of 5–6 g. in previously untreated cases, the order was unchanged. Of the remaining 3 drugs, streptomycin showed no very obvious superiority over sulphonamides or penicillin.

(3) In general the results were markedly superior in cases in which no treatment had previously been given. In persons previously failing with terramycin, aureomycin, or chloramphenicol, terramycin gave the best results, and terramycin was also superior to streptomycin. Terramycin and aureomycin were the most successful drugs for persons who had failed with the sulphonamides.

(4) Terramycin is considered the best drug of those tested for the treatment of non-specific urethritis. Although reasonably successful results were obtained with doses of 5–6 g. over 5–6 days, higher doses were more successful. The optimum dosage is probably in the region of 2 g. daily for 5 days.

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REFERENCE

- Willcox, R. R. (1954). "Researches in Non-specific Urethritis. Part I, Aetiology", *Brit. med. J.*, 1 (in the press).