TREATMENT OF ACUTE GONORRHŒAL URETHRITIS
IN THE MALE WITH A SINGLE INJECTION OF
OXYTETRACYCLINE*†

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An antibiotic used in a venereal disease clinic in
the routine treatment of acute gonorrhoea must be
therapeutically effective, injectable, and relatively
non-allergenic. It is best if given in one clinic visit,
and it should be neither excessively painful nor
prohibitively expensive. Except for allergic prop-
erties, penicillin is such an antibiotic, and is, there-
fore, at the present time the foundation of the treat-
ment programme for gonorrhoea. Unfortunately,
the increasing incidence of penicillin sensitivity
(Olsen, 1958; Welch, Lewis, Weinstein and Boeck-
man, 1957; McFarland, 1958) and the increasing
number of penicillin-resistant gonococci (Reyn,
Korner, and Bentzon, 1958; Thayer, Perry, Field,
Martin, and Garson, 1960) have challenged the
usefulness of penicillin in gonorrhoea treatment.

A number of other drugs (Braff, David, Perkins,
Koch, Gara, and Stephens, 1956; Perkins, Koch,
Gara, Stephens, and David, 1955) have been thought
to be of value in the treatment of acute gonorrhoea,
but none has been shown to be as satisfactory as
penicillin in terms of the criteria given above. Before
undertaking our present study we have tested 1 g.
streptomycin and 2 g. chloramphenicol as potential
penicillin substitutes in the treatment of gonorrhoea.
Using the method described below both these
schedules yielded a discouragingly high treatment
failure rate of about 30 per cent. The present study
reports three dosage schedules of a newly available
preparation of oxytetracycline, in an aqueous pro-
pylene glycol base with 2 per cent. lidocaine added.†

Ideally, each patient in a gonorrhoea treatment
study should be examined with two post-treatment
cultures and should abstain from sexual intercourse
during the study period. However, we know our
patients will not refrain from intercourse, and that
less than one half will return for follow-up.

Methods other than ideal must eliminate or
equalize the factors of re-infection and of treatment
failure. The method used herein assumes these
factors to be constant for any given period of time,
so that the reported failure rate is a direct function
of the true failure rate. When the failure rate calcu-
lated for the drug under investigation is compared
with a rate similarly calculated for an adequate dose
of penicillin, a practical and useful assessment of the
value of the study drug can be made.

The following dosage schedules were administered
on alternate weeks.

(1) 250 mg. intramuscular oxytetracycline.
(2) 500 mg. intramuscular oxytetracycline.
(3) 250 mg. intramuscular oxytetracycline at the time
   of diagnosis and 250 mg. repeated after 48 hrs.
   (This schedule was added toward the later part of
   the study.)
(4) 1,200,000 units procaine penicillin G in oil with
   2 per cent. aluminium monostearate (PAM).

All the male patients seen at the Houston Venereal
Disease Clinic with a clinical diagnosis of acute
gonorrhœal urethritis had cultures taken and were
given the drug which was in use that particular week.
Only patients with a positive culture for gonorrhoea
were included in this study. Patients were not told
what drug they were to receive or that they were being
included in an investigation. Patients who returned
to the clinic with reappearance or non-disappearance
of symptoms had cultures repeated. The question
whether to re-treat the patient at this time was left

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to the clinician's discretion. The patients who voluntarily returned to the clinic within 30 days and were again culturally positive were counted as failures. The 30-day period may seem longer than necessary, but it was selected to make certain that all failures were counted, and in order to demonstrate the constancy of the re-infection rate after the first 10 to 12 days. Evaluation is based on the percentage of treatment failures.

Results

Of 997 patients included in the present study, 365 received 250 mg. intramuscular oxytetracycline; 197 received 500 mg. intramuscular oxytetracycline; 91 received 250 mg. intramuscular oxytetracycline and an additional 250 mg. after 48 hrs; and 344 received 1,200,000 units PAM.

The Figure indicates that the patients on schedules 2 and 4 (500 mg. intramuscular oxytetracycline and 1,200,000 units PAM) had similar cumulative failure rates of 8 per cent. in 30 days. Those on schedule 1 (250 mg. intramuscular oxytetracycline) had a failure rate of 17 per cent. at 30 days, approximately 9 per cent. higher than those on PAM. Those on Schedule 3 had a failure rate of 12 per cent., 4 per cent. higher than those on PAM.

It was interesting to note that all seven patients on Schedule 3 who failed before the 16th day had positive cultures when they received their second injection.

No allergic manifestation was observed after the use of intramuscular oxytetracycline, but this drug does cause considerable pain when given intramuscularly. For the first 4 hours little discomfort is experienced; but about 4 hours after the injection, probably after the effect of the lidocaine has worn off, many patients complained of muscular stiffness and soreness at the injection site. Surprisingly, when the drug was injected into the deltoid muscle, less discomfort was experienced than when it was given into the gluteal muscles.

Summary and Conclusions

1) 500 mg. intramuscular oxytetracycline appears to be as satisfactory as 1,200,000 units PAM
for the treatment of acute gonorrhoea in the male, but 250 mg. proved to be unsatisfactory. 

(2) 250 mg. intramuscular oxytetracycline followed by an additional 250 mg. after 48 hrs does not appear to be as satisfactory as the single dose of 500 mg.

REFERENCES

Traitement de l’urétrite gonococcique aiguë de l’homme par une seule injection d’oxytétracycline

Résumé

(1) 500 mg. d’oxytétracycline intramusculaire semblent être aussi efficaces que 1.200.000 unités de PAM (pénicilline retard) dans le traitement de la gonorrhée aiguë de l’homme, mais 250 mg. ne suffisent pas.

(2) Deux doses de 250 mg. d’oxytétracycline intramusculaire administrées à 48 heures d’intervalle ne semblent pas avoir autant d’efficacité qu’une seule dose de 500 mg.