INSTANT TREATMENT OF GONORRHOEA IN SINGAPORE

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SYNOPSIS

Patients with Gonococcal urethritis were treated with different instant antibiotic regimes. With high doses of Penicillin and Ampicillin no failures were recorded. With Rifadin 8% and Tetracycline 18.2% failure rates were recorded. The advantages and disadvantages of the different treatment regimes are discussed.

Thanks are due to Gruppo Lepetit for the supply of Rifampicin.

In the instant treatment of Gonorrhoea a therapeutically effective dose of the drug is administered in a single oral or parenteral dose under supervision. It has many advantages in not only effectively and conveniently treating the individual patient, but also in controlling and containing the disease.

Many drugs have been advocated in the treatment of Gonorrhoea, Penicillin, Ampicillin, Cephaloridine, Cephalexin, Tetracyclines, Kanamycin, Spectinomycin, Erythromycin, Spiramycin and Rifadin have been used in instant regimes with varying degrees of success in different regions.

The ideal drug in the treatment of Gonorrhoea should be effective and should be able to provide at least a 95% chance of cure, should be safe, should be cheap, and be easily administered by a method convenient to the doctor and the patient.

MATERIAL AND METHODS

Male patients presenting to the male out-patient department of Middle Road Hospital were admitted to the trial. Diagnosis was based on the presence of a urethral discharge, and of gram negative diplococci in gram-stained smears. The choice antibiotic was given under direct supervision of the investigator. Patients were requested to report on the 3rd, 7th and 15th post-treatment days, when they were examined for the presence of any urethral discharge and the urine inspected for urinary sediments. Discharge and sediments if present were examined to exclude the presence of any gram negative diplococci. The V.D.R.L. test was done on admission, after 6 weeks and 12 weeks to unmask sub-clinical syphilis.

If Gonococci appeared within 14 days of treatment and if the patient denied any further marital or extramarital intercourse then infection was considered to have relapsed.

In the present study results of one dose antibiotic regimes to the following were assessed:

(i) *Inj. Benzyl Penicillin*

1 gm. of Probenecid was given. 30 minutes later 5 mega units of Benzyl Penicillin diluted in 2·5 ml. of distilled water and 1% Lignocaine was given by deep intra muscular injection.

(ii) *Procaine Penicillin*

1 gm. of Probenecid was given. 30 minutes later 2·4 mega units of Procaine Penicillin was given by deep intra muscular injection.

(iii) *Cap. Ampicillin*

1 gm. of Probenecid simultaneously with 1 and 2 gm. of Ampicillin were swallowed in the presence of the investigator.

(iv) *Cap. Tetracycline*

3 gm. of Tetracycline were swallowed in the presence of the investigator.

(v) *Cap. Rifadin*

900 mg. of Rifadin were swallowed in the presence of the investigator.

RESULTS

Table I shows the results of treatment obtained using antibiotics and Table II the sensitivity pattern of 104 Singapore Strains of Gonococci.

Of the 126 patients on 3 gm. of Tetracycline, 18·2% failed. 8% of those on Rifadin failed. In the group of 170 patients on Benzyl Penicillin only 84 were followed up and there were no failures. Of the 170 patients on Procaine Penicillin 81 were followed up with no failures. The number of defaulters amongst patients on Ampicillin was much lower largely due to tighter and closer supervision, and there were no failures in this group.

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TABLE I

RESULTS OF TREATMENT WITH DIFFERENT ANTIBIOTICS GIVEN IN SINGLE DOSES FOR THE TREATMENT OF GONORRHOEA

Antibiotic	Dose	No. of Cases	No. Followed	No. Failed	% of Failure of these Followed	Cost in Singapore Dollars
Benzyl Penicillin	5 mega units	170	84	0	0·0	1.85
+						
Probenecid	1 gm.	—	—	—	—	—
Procaine Penicillin	2·4 mega units	170	81	0	0·0	0.60
+						
Probenecid	1 gm.	—	—	—	—	—
Ampicillin	1 gm.	36	27	0	0·0	4.70
+						
Probenecid	1 gm.	—	—	—	—	—
Ampicillin	2 gm.	32	26	0	0·0	9.00
+						
Probenecid	1 gm.	—	—	—	—	—
Tetracycline	3 gm.	206	126	23	18·2	3.00
Rifadin	900 mg.	50	37	3	8·0	6.00

DISCUSSION

The treatment of Gonorrhoea is now critical in South East Asia (Willcox, 1970). Sensitivity studies undertaken at the WHO Neisseria Centre of 104 Singapore Strains in 1970 showed that 87% were less sensitive to Penicillin, 57% less sensitive to Tetracycline and 60% to Rifadin (Morton and Leong, 1971). A similar pattern is evidenced in the rest of the Far East. Unless this tendency is curbed with efficient treatment regimes, in this age of tourism and jet travel, its wider dissemination would seem inevitable.

Based on clinical evaluation, it was becoming apparent that the local strains of Gonococci were becoming increasingly resistent to Penicillin in dose of 600,000 units of P.A.M. and 1·2 mega units of Procaine Penicillin. Failure rates were in the region of 35% and 30% respectively. Oslen and Lomholt in Greenland and Gray, Phillips and Nicol in London obtained cure rates of 99 and 99·5% respectively with 5 mega units of Procaine Penicillin with 1 gm. of Probenecid in the Pacific region with 98% cure rates. These two regimes were introduced in 1970 with comparable results. Undoubtedly higher doses of Penicillin yield better therapeutic results. If this treatment is adopted by more doctors, it can be speculated that in the years to come there will be a fall in the incidence of less sensitive strains. General practitioners in the region have qualms about using Penicillin because of the potential danger from anaphylactic accidents, hence alternative regimes which are just as effective need exploring.

TABLE II

SENSITIVITIES OF 104 STRAINS OF GONOCOCCI FROM SINGAPORE (MODIFIED FROM MORTON AND LEONG)

Antibiotic	Definition of Resistence	% Sensitive Strains	% Less Sensitive Strains
Penicillin	IC_{50} 0·053 meg./ml. or less = less sensitive	14	87
Tetracycline	IC_{50} 1·13 meg./ml. or more	44	57
Rifampicin	IC_{50} 0·25 meg./ml.	41	60

With Ampicillin and Probenecid good results were achieved with no failures. A failure rate of 1·2% was recorded using 2 gm. of Ampicillin with 1 gm. of Probenecid in 500 patients in Oslo (Gundersen and Odegaard, 1969). Anaphylactic reactions are exceedingly rare from Ampicillin (Willis, 1970) and it would appear to be the ideal alternative to Penicillin in the treatment of Gonorrhoea for the region.

The failure rate of 18·2% with 3 gm. of Tetracycline precludes its use locally. 25% of patients

complained of nausea and vomiting and this might have a bearing on the high failure rate. Rifadin was introduced in the treatment of Gonorrhoea in 1968, by Willcox and a failure rate of 11·2% recorded. Against local strains a failure rate of 8% was recorded and there were no side effects. It is suggested by some that its routine use in the treatment of Gonorrhoea might encourage the emergence of resistent strains of tubercle bacilli. The danger does not seem real (personal communication with chest physicians) and the drug should not be denied to Penicillin and Ampicillin sensitive patients for this reason.

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