able size is passed. If possible we keep the patient under observation for a further two days, as occasionally there is a delayed reaction to the vaccine.

You will note the frequency with which the "morning smear" is investigated, and the fact that every patient has at least two prostatic examinations. This is because we are well aware that one of the dangers of sulphapyridine therapy is that in some cases pus formation, the cardinal sign of gonorrhoea, is decreased, while gonococci may occasionally be present in the urethra or in the prostatic secretion.

When our tests of cure and the period of observation are finished the patient returns to duty, but observation on the case does not end. Three weeks later the man reports to a military hospital, where he is examined by a medical officer who has had a training in the treatment of venereal disease. He is examined for signs of urethral discharge; the two-glass urine test is made, a prostatic smear is taken, and usually a curved sound is passed. The same investigation is repeated during the following two weeks. Although all the tests may be negative (and if they are not he is immediately referred back to us for treatment) he is not yet passed as cured. Three months after his discharge from hospital he is sent either to us or to some other centre. Another provocative injection of gonococcal vaccine is given, and all the usual tests—macroscopic, microscopical, and urethrosopic—are carried out. Only if these are negative is he discharged as cured. During the period of surveillance Wassermann tests are carried out to ensure that a concomitant infection with syphilis has not been missed.

I think, therefore, that we can claim that our work, though purely clinical, is well controlled: this being so, it is satisfactory to find that the relapse rate is under 5%.

Summary

The incidence of venereal disease is discussed, together with the part played by the Medical Services of the Army in prevention.

An intensive method of treating gonorrhoea is described at some length.

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ACUTE GONORRHOEA

FURTHER OBSERVATIONS ON TREATMENT BY SULPHAPYRIDINE FOLLOWED BY LAVAGE

BY

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In my original article (Sommerville, 1939) I reviewed 152 consecutive cases of acute gonorrhoea treated with sulphapyridine alone, without adjuvant therapy, in 90% of which early cures without complications were obtained. By comparison Dr. J. G. McGregor-Robertson (1938), using the drug in connection with lavage, claimed 100% early cures, but with 3% complications.

Technique

In a final note to that article I stated that I had altered my technique. This alteration was made in an attempt to maintain the freedom from complications and at the same time to improve the percentage of early cures. The present article is a review of 300 consecutive cases treated according to the new technique, which is as follows.

Sulphapyridine is given, the dosage being 0.5 gramme (one tablet) four times a day for one week. Irrespective of the clinical results at the end of this period, irrigation with 1 in 8,000 potassium permanganate daily is instituted for a week, followed by similar lavage on alternate days for another week. In most cases this completes the treatment, but if the clinical and urinary examinations are not entirely satisfactory at the end of three weeks lavage is persisted with until the desired result is obtained. Thereafter observation for three weeks is maintained, and a prostatic smear is then taken; if this is satisfactory (less than four pus cells per field) urethrosopic examination, followed by the passing of a curved bougie, is carried out a week later. If there is no response to instrumentation a routine Kahn test is done the following week; and finally, all being well, the patient is discharged at the end of nine weeks.

It is now fairly well established that if sulphapyridine is going to act satisfactorily, as it does in 90% of cases, it will do so in approximately three days. If a urethral discharge of any type exists after a week I believe that the virulence of the gonococcus is so diminished that any danger of complication arising as a result of irrigation is at a minimum.

Survey of Results in 300 Cases

The results obtained from the present series serve to prove my contention that large doses of the drug are not necessary, and that practically 100% of early cures can be obtained with almost the same percentage of freedom from complications. This article is published not simply because I think the results are satisfactory but more especially as a plea for economy in the use of the drug and with all due deference to those who believe in and employ massive or intensive dosage.

In going over the case records I find that my original enthusiasm in investigating the time interval required for urethral smears to become gonococcus-negative has waned considerably, and such observations were noted in 103 cases only. The average time interval in these was 1.74 days, compared with 1.92 days in my original series.

For the purpose of "dry" observations 9 cases are excluded from the record of figure averages. Of these 9 patients 7 were irregular attenders and, later, defaulters with no dry observations of any value owing to the time intervals in their attendance, 1 (a chronic persistent alcoholic who defaulted after nineteen days) failed to clear up or even improve, and 1 (one of two cases which showed repeated relapse, and the subject hereafter of a special note) relapsed before a completely dry observation could be obtained. I have divided the remaining 291 into four groups, as shown in Table I.

TABLE I

Type	No. of Cases	Urethra Dry. Day Average
Average case	250	4.98
Avowed alcoholics	33	23.09
Admitted re-exposures	5	25.60
Complications before therapy	3	30.00
Total	291	7.66

This division has been made because there is such a marked discrepancy between the figures of the normal average case and the other three groups. Especially interesting is the alcoholic group. The intake of alcohol quite evidently makes a considerable difference in the prognosis of a case, as the figures prove. It is also scarcely fair to slump all the cases together and thus alter materially the statistics obtained. The results obtained in the present series conform very closely to those of my previous one. Thus from the figures already given it can be seen that out of 293 cases 2 (0.68%) may be recorded as failures.

I have once more investigated the question of intolerance, so as to arrive at a more or less accurate estimate of any toxic upset with the moderate dosage employed. Of the 300 cases 39 (13%) gave some sign of intolerance, 9 of them having two symptoms. Table II shows the incidence of each upset.

TABLE II

Kind of Upset	No.	Average Day Incidence
Nausea	14	2.85
Temperature	1	3 (2 influenza')
Headache	14	3.85
Indigestion	5	4
Vomiting	7	4
Cyanosis	2	5
Vertigo	4	6
Rash	1	7

Table III shows the incidence of complications noted before and after starting treatment: 10 (3.33%) were recorded before and 5 (1.66%) after therapy began.

TABLE III.—Complications

Type of Complication	Before Treatment	After Treatment	Explanation of Complications Noted After Treatment
Prostatitis	6	2	1: alcohol ++ 1: wife G.C. +
Epididymitis	3	2	1: prostatitis before 1: re-exposed
Prostatitis + epididymitis ..	1	—	
Periurethral infiltration ..	—	1	
Total	10	5	

Relapse was noted in 20 (6.66%) of the cases reviewed, no history of re-exposure or fresh infection being admitted. Alcoholism accounted for 15, and this was denied in the remaining 5. Of these 5 patients 2, including the case already mentioned, gave a history of repeated relapse, and constantly denied sexual excitement, re-exposure, or alcoholism. The remaining 3 cases gave no history of alcoholism either before or after the onset of the disease, and are therefore more likely to be examples of genuine failure to respond to the drug. They subsequently cleared up, however, with additional treatment. Of all the cases of relapse 10 subsequently cleared up completely and were discharged well, 9 defaulted, and 1 was transferred to another centre.

I am afraid that I very gravely doubt the veracity of the statements of many patients attending at V.D. centres. I have often been given a denial as regards intake of alcohol, which was later corrected after a lapse of time, when the patient had forgotten what he had told me. *Omnis syphiliticus mendax est* is as true to-day as it ever was, and every dodge and trick must be employed to elicit the truth. The failure of all my wiles to break down repeated denials of alcohol or re-exposure, and the protestations, with every appearance of injured innocence, in two cases of repeated relapse worried me not a little.

These two cases proved so troublesome—and ultimately interesting—that they merit a note by themselves. In both cases, to begin with, alcoholism was admitted at the first examination, but thereafter alcohol, re-exposure, and sexual excitement were consistently denied. No sign of any complication could be found in spite of full and persevering clinical examination for any residual focus. Even before they were ultimately and finally dismissed as cured an appeal to "honour in the cause of science," an appeal which I have often found effective in getting the truth, failed completely, so that I was left with an uneasy and unhappy feeling about the mystery of it all. Both cases had had chemotherapy and lavage, repeated at intervals, and also vaccine therapy. The result was always the same—a quick response to treatment, complete freedom

from symptoms for two to three weeks, and then a breakdown to "purulent" again.

While going over the records and preparing my figures I was struck by the comparative regularity of those repeated relapses; so with the aid of a calendar I checked up on the day of the week that each clinical note of "purulent" was made. To my astonishment, and I must admit relief, the incidence of relapse fell on a Monday, except for a few occasions when it fell on a Thursday—that is, forty-eight hours after a Saturday or Tuesday holiday. My own conclusion, although another interpretation may be possible, is that both men had succumbed to temptation and had lied consistently. I presume that the repeated questioning, with the obvious suspicion that I simply did not believe them, and ultimately an increasingly poor prognosis being hinted at, must have scared them sufficiently off alcohol to enable a cure to be finally obtained. Table IV shows the incidence of relapse, the above 2 cases being excluded.

TABLE IV

	No.	Time of Relapse in Days					
		1-7	14	21	28	35	56
Alcohol	15	2	3	2	3	4	1
No apparent cause ..	3	—	1	1	1	—	—
Total	18	2	4	3	4	4	1

Conclusions

These follow-up investigations confirm the efficacy of sulphapyridine as a cure for gonorrhoea. Moderate dosage—namely, 0.5 gramme four times a day—has continued to give excellent results, and intolerance with this dosage is not pronounced. The use of subsequent irrigation has increased the early cures to practically 100%, with almost the same percentage of absence of complications.

Summary

Review is made of 300 consecutive cases of acute gonorrhoea treated with sulphapyridine, 0.5 gramme four times daily for one week, followed by two weeks' lavage.

Only 2 (0.68%) patients failed to show the usual early clinical cure: one an avowed alcoholic and defaulter; the other, with a subsequent history of repeated relapses, almost certainly an alcoholic.

The course of the disease in alcoholics, in those re-exposed, and in those presenting complications before treatment is contrasted with the average normal case.

Toxic symptoms were noted in 13% of cases, none of them serious.

Complications arising after treatment was begun occurred in 5 (1.66%) cases, but in 4 of them an exciting cause is demonstrable. In only 1 (0.33%) case can the drug be said to have failed to prevent a complication.

Relapse occurred in 20 (6.66%) cases, alcoholism being admitted in 15 and being present almost certainly in 2 others. In 3 (1%) cases relapse occurred for no apparent reason.

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Dr. F. M. Turnbull (*J. Amer. med. Ass.*, 1941, **116**, 1899) treated cases of chronic sinusitis by spraying the nasal passages with a 5% solution of the sodium salt of sulphathiazole. He states that considerable relief was attained in 40 out of 47 patients. He observes that cultures taken from the sinus have shown that the predominating organism is the staphylococcus.