attends regularly and passes all the tests on the first occasion, the time taken from the first attendance to that of discharge is between five and six weeks.

Results

This method of treatment has produced 96 per cent. of cures in the series of 100 cases, divided into 64 per cent. absolute cures and 32 per cent. apparent or clinical cures (those who failed to return for some of the final tests but whose urine was clear, and who had passed all tests until they defaulted). The percentage of failures was therefore 4. Three cases developed a rash towards the end of the second week, one had severe mental depression, and three complained of considerable nausea. One of those with a rash defaulted before final tests had been carried out, but the rest of those who suffered from treatment complications were completely cured.

It must not be thought that all the cures were established in between five and six weeks: many of the patients were not regular in their attendances, and consequently their cure took varying longer periods. The four failures are not ascribable to any fault in the method of treatment, but in three cases were due to gross irregularity of attendance, and in one to a probable reinfection, to which the patient would not admit. No patients who defaulted before the prostatic bead was examined are included, since there is no means of estimating their condition.

If these results are on an average better than those obtained elsewhere it would appear that this is due to the following reasons: (1) No attempt was made to discover the shortest time in which it is possible to obtain a cure by the use of sulphapyridine. (2) Natural immunity was allowed to be in the ascendant before chemotherapy was begun. (3) Four tablets daily of sulphapyridine are actually more effective therapeutically than any other number. (4) Irrigations at a constant temperature of 105° F. were given daily for the first four weeks.

Commentary

In the modern treatment of gonorrhoea there is a growing tendency to cut irrigations down to a minimum and in some cases to dispense with them altogether. This may be justifiable in private practice, where the intelligence of the patient is as a rule above the average and where the personal success of the venereologist is often directly dependent upon rapidity of cure. On the other hand, as it has taken years of propaganda to make the public realize to some extent the seriousness of venereal diseases, it seems a thousand pities suddenly to undo all that good work by informing them that gonorrhoea can now be cured by taking a few tablets. It is surprising how many patients of the clinic class (and they form the large majority of V.D. sufferers) even to-day have little or no appreciation of the difference between gonorrhoea and syphilis.

If clinics cut down irrigations to a minimum or dispense with them altogether there will without doubt be a greater incentive for patients to cease attending as soon as the discharge has stopped: all venereologists must know of many a case in which this has occurred after two or three tablets of sulphapyridine. If the only use of lavage in modern clinic practice is to give the patient something to attend for, then it does serve a very useful purpose. Allowing the patient to think that gonorrhoea is of no account will in the end only lead to greater promiscuity, with a consequent increase in both gonorrhoea and syphilis.

Addendum

Since the completion of the above article it has occurred to me that a report on 100 cases may not be very convincing. Accordingly a further series of 150 consecutive cases has been analysed, and these have shown a similar result. Furthermore, the country is now at war. Previous wars have invariably been responsible for a marked increase in the incidence of venereal disease, and although that increase has not been noted as yet, that is no foundation for believing that none will occur. As all thinking people must realize, times of national stress are very apt to upset and undermine moral standards. Taking these facts into consideration, together with the fact that the great majority of male venereal disease is to be found in otherwise healthy men of military age, it would seem that a short and successful method of treating gonorrhoea is of even greater importance now than at the time when this article was written (just before the outbreak of hostilities). While not maintaining that the method advocated is incapable of improvement, it would seem a significant fact that it has stood very satisfactorily a test of twelve months, and the results obtained have been consistently good.

My grateful thanks are due to Dr. Fraser, medical officer of health, and to Dr. A. O. F. Ross, senior V.D. medical officer, both of the City and Port of Liverpool, for permission to publish the figures in connexion with the cases.

RESULTS OF TREATMENT OF GONORRHOEA WITH SULPHAPYRIDINE FURTHER OBSERVATIONS

BY

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Since I published the preliminary results of the treatment of sixty-five cases of acute gonorrhoea by means of sulphapyridine (M & B 693) in the *Lancet* last November 246 further cases in all stages of the disease have been dealt with. The results of these have been more in conformity with those published by other observers. In the early series of cases I obtained only 57 per cent. of cures, but in the light of further experience this requires some explanation. In the former series cures were considered to be only those cases which responded to one course of the drug—that is, a course of 3 grammes (six tablets) daily for six days with or without irrigation. Since then a larger number of cases have been treated, the routine being to give 3 grammes daily for the first week, followed by 1.5 grammes daily for the second week. In almost all cases irrigations of 1 in 8,000 oxycyanide of mercury at a temperature of 105° F. were employed in addition. The cases were under observation at the Seamen's Dispensary or at Mill Road Infirmary, Liverpool.

Results

Cases were divided into "acute" and "chronic." Those classed as acute were all patients reporting at the clinics who had received no previous treatment for their disease and in whom gonococci were found to be present; those classed as chronic had received various degrees of treatment before reporting. In this latter group gonococci were not invariably found, but there was good reason to

believe that each case had been one of undoubted gonorrhoea. Most of these cases had had other types of treatment; many had already received drugs of the sulphanilamide type, but in no case had sulphapyridine been given. Of the 246 patients forty-one defaulted too early to assess the value of the drug, and they have been omitted from the final tables of results. The remainder have been divided into cures, apparent cures, and failures or relapses.

TABLE I.—*Showing Results of Treatment*

	Acute Cases		Chronic Cases		Acute & Chronic	
	No.	%	No.	%	No.	%
Cures	101	63.0	35	77.7	136	66.3
Apparent cures ..	47	29.5	2	4.4	49	24.0
Failures or relapses	12	7.5	8	17.9	20	9.7
Total ..	160		45		205	

TABLE II.—*Results obtained if Apparent Cures are considered to be Real Cures*

	Cures		Failures	
	Number	Per Cent.	Number	Per Cent.
Acute	148	92.5	12	7.5
Chronic	37	82.1	8	17.9
Total	185	90.3	20	9.7

"Cure" required the patient to have completed all treatment, after which a rest period of one week was allowed, during which time all dietetic restrictions were removed and alcohol was no longer forbidden. At the end of this rest period the patient submitted to a full test of cure, which consisted of provocation by means of a pure gonococcal vaccine, the passage of urethral bougies, and careful massage of the prostate and seminal vesicles, with microscopical examination of the respective secretions. One would have liked, in addition, to make cultural tests on all cases, but certain technical difficulties could not be overcome. In the near future, however, we hope that this additional safeguard will not only be possible but will be a routine measure at the clinics. An "apparent cure" was considered to be a case in which the patient completed treatment satisfactorily but failed to return for the tests of cure or to complete all the tests before defaulting. In every such case in this series there was no urethral discharge and the urine was clear without threads at the time of the last visit to the clinic. Failures were those cases which after a reasonable time persisted with a urethral discharge, continued to pass a hazy urine with threads containing pus, or developed complications. Some of these cases did subsequently clear up, but there was no reason to suppose that the course of their disease had been favourably influenced by the drug in question. Complications were singularly few, and toxic reactions were seldom encountered. The proportion of cases exhibiting toxic symptoms due to the drug remained, as before, slightly under 6 per cent. This figure is much lower than that generally accepted, but as a large number of the patients were seafarers their hardiness may no doubt have had some bearing on this fact. While I am unable to produce any accurate figures it is noteworthy that the percentage is considerably higher in the case of private patients.

Most of the early acute cases were treated by sulphapyridine from the very beginning of their infection—many on the first day. The results compared well in every way with those obtained in cases treated later, and in my

opinion it is quite unnecessary to delay the administration of this most valuable drug. Many of the patients improve in a truly remarkable fashion and are free from discharge within twenty-four or forty-eight hours after starting treatment. One cannot, however, too strongly emphasize the necessity for continuing treatment for a reasonable period after this desirable stage has been attained and cannot too strongly deprecate the so-called "quick cures." Needless to say, very thorough testing is necessary to ensure that the cure is complete.

Summary

A very high percentage of cures can readily be obtained with sulphapyridine provided the drug is not withdrawn too early.

A satisfactory scheme of dosage appears to be 3 grammes daily for one week, followed by 1.5 grammes daily for a further week.

Patients appear to improve more satisfactorily when irrigations are used in addition, but the advantage is not very great.

Complications during treatment are rare.

Toxic reactions to the drug are not more than 6 per cent.

Cures can be obtained in 92.5 per cent. of early acute cases and in 82.1 per cent. of chronic cases in all grades of severity.

No preliminary waiting period is necessary or indeed advisable.

I would like to express my thanks to Dr. A. O. Ross for allowing me the facilities to carry out this investigation and for the use of the results obtained at Mill Road Infirmary; and to Dr. W. M. Frazer, medical officer of health for the city and port of Liverpool, for permission to publish these results.

Clinical Memoranda

Rupture of Subphrenic Abscess into the Lung: Bronchoscopic Drainage: Recovery

The acute secondary rupture into the lung of a subphrenic abscess treated successfully by bronchoscopic drainage and followed by recovery appears to be relatively uncommon. Steele (1937) in a ten-year period at the University of Michigan Hospital managed to collect six cases of rupture into the lung out of forty-eight cases of subphrenic abscess. This represents a frequency of 12.5 per cent., and is about the figure given by most observers (Cauderay, 1902; Piquand, 1909). Beye (1932), however, in a series of thirty-one cases, which were presumably late, reports rupture found at necropsy in as many as fifteen.

The accepted method of treatment (Steele, 1937) is immediate free surgical drainage of the original subphrenic abscess. An important accessory treatment, however, is bronchoscopic aspiration of the secondary collection of pus from the bronchial tree (Christopher, 1938). In cases in which the rupture into the lung causes sudden and extreme respiratory distress on account of the quantity of pus invading the bronchial tree, timely bronchoscopic aspiration may be life-saving. This point is illustrated by the following case.

CASE HISTORY

A normally developed youth aged 16 was admitted to hospital on November 16, 1938, on account of abdominal pain of three and a half days' duration. There was no history of previous illness. On examination his general condition was good; temperature 99°, pulse 102, respirations 24; his