

## GONORRHOEA IN ITALY

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THIS communication gives an account of some of the difficulties encountered in the treatment of gonorrhoea in the British Army in Italy. It is a record of the failure of sulphonamide therapy. Various interesting outlines of the subject have already appeared in Medical Journals, particularly an article by Campbell, and an Editorial on the subject of sulphonamide resistance, in the June, 1944, number of the R.A.M.C. Journal. Sulphonamide-resistant gonorrhoea had already been encountered in Sicily and in North Africa (Cronin). In Italy, only 25 per cent of patients were cured by a single course of sulphonamide, reckoning 25 to 30 grams as one course. All types of sulphonamide were equally disappointing.

The accumulation in hospitals of chronic cases of gonorrhoea presented a problem of considerable importance. In some hospitals this seriously interfered with the activities of other departments. For some months, at the outset of the campaign, the problem baffled both the clinician and the medical administrator. This was further complicated by the misfortune that there were too few venereologists to carry the burden and a very high incidence of venereal disease among the troops generally.

Typical of the history of many V.D. clinics was that of a 100-bed unit in a metropolitan area. During November and December, 1943, the monthly admission rate of all V.D. patients to this unit was 1,500. This represented more than 1,000 cases of gonorrhoea to be treated each month. Under such circumstances a quick turnover was essential but, in fact, each patient spent an average of five weeks in hospital.

In an effort to combat the menace, every form of sulphonamide was tried, every type of ancillary treatment was experimented with, every fashion found a place and a backer. The results were the same everywhere. Gonorrhoea patients threatened to choke the hospitals.

The analysis which follows is derived from 500 cases, which are divided into three groups. (1) Group 1 represents a sample of the most chronic cases in Western Italy. It consists of 100 cases, which are analysed to show their condition prior to being selected—and rescued—to undergo experiments with penicillin. Selection was made rather on account of chronicity and sulphonamide resistance than on account of complications. The group represents some 15 per cent of the total gonorrhoea cases in the clinics from which selection was made.

(2) Group 2 consists of 100 cases which were chosen from one clinic of which they formed some 30 per cent of the total gonorrhoea cases. The statistics show the condition of this group prior to the exhibition of penicillin. Their "rescue" came earlier than that of the cases in Group 1, because the military situation was such that hospital beds required to be cleared very quickly. The analysis of this group merely substantiates the evidence of Group 1—but to a less striking degree—that chronicity and sulphonamide resistance were severe.

(3) Group 3 consists of 300 patients who were not treated with penicillin and the analysis is made in percentage figures. All the cases in this group presented themselves for final test of cure. They had been treated in various clinics in Italy and by a variety of methods. Selection was made at random. Their period of treatment covers the months between November, 1943, and May, 1944. Since penicillin was being used to treat sulphonamide-resistant cases during the last three months of this period, many chronic cases which would otherwise have found a place in this group had been extracted to undergo penicillin treatment. Hence the figures for the group should give a picture a little more flattering than the truth of the average.

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*Group 1.*—(a) The number of courses of sulphonamide used is shown in fig. 1. The figure shows that 76 per cent of the patients had received three or more courses of sulphonamide prior to treatment with penicillin. It is interesting to record that the official directive to medical officers in the early months of the Italian campaign had advised that gonorrhœa cases should be treated on duty with sulphathiazole, 10 g. in two days (Campbell).

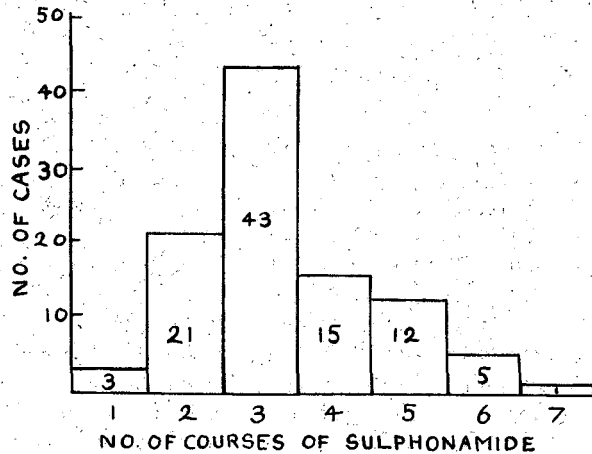


FIG. 1.

(b) The time each patient occupied a hospital bed is illustrated diagrammatically in fig. 2. The average was nine weeks. Penicillin cured 98 per cent of these men in as many days, and if it had been available for each case at first diagnosis the saving to the Army would have been some £30 per head. In these 100 cases, then, sulphonamide had been almost useless.

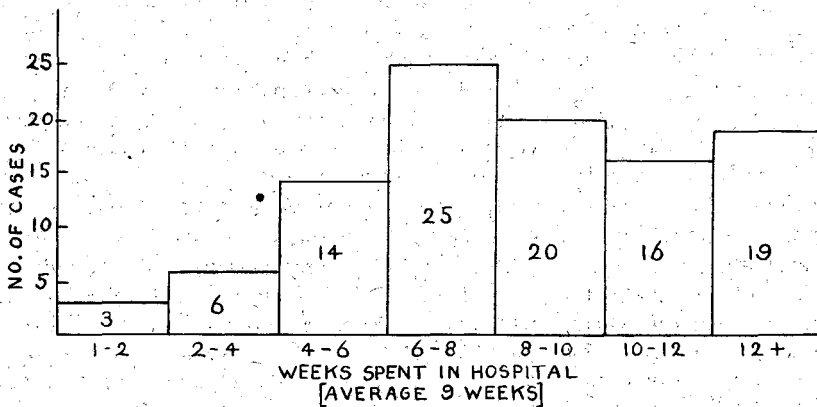


FIG. 2.

(c) The complications met with are tabulated. The list reveals the curious fact noted elsewhere (Campbell) that complications were local and not systemic.

Prostatitis (acute)	0
Prostatitis (subacute or chronic)	52
Vesiculitis (all stages)	11
Epididymitis (acute)	4
Epididymitis (subacute or chronic)	17
Peri-urethral abscess	2
Tysonitis, or peri-urethral duct infections	3

Only 10 cases were apparently uncomplicated and only one showed signs of sulphonamide poisoning. The rarity of acute complications is explained by the fact that the assessment was made just prior to treatment with penicillin, when acute lesions had, for the most part, passed into the chronic stage after weeks in hospital. It was characteristic of the Italian disease that complications were the rule rather than the exception and this was in no way the result of over-meddlesome treatment. Patients would develop complications in a most disconcerting way during a course of sulphonamide, while they lay in bed at rest and free of all interference by local treatments or digital and instrumental investigation. It is little wonder that some medical officers attempted to explain such a common phenomenon by postulating that the gonococcus was in itself hyper-virulent.

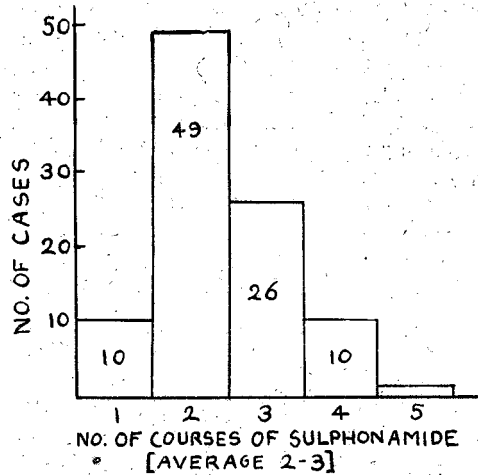


FIG. 3.

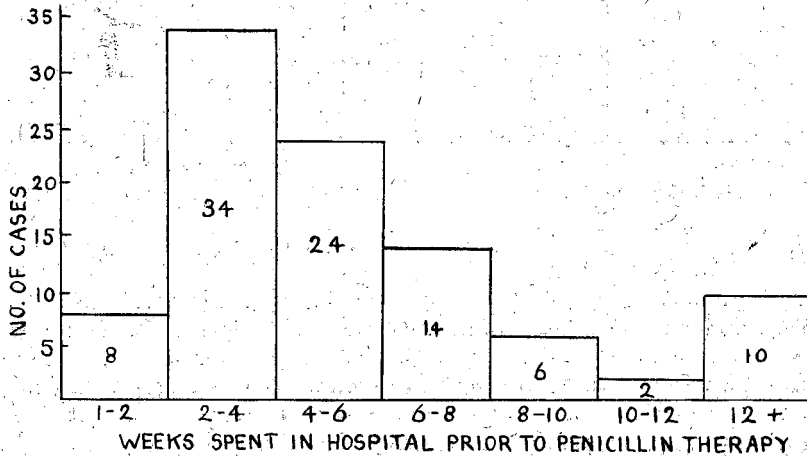


FIG. 4.

In the table on page 22 only major complications are recorded where more than one complication occurred in the same case. Among the minor complications were a variety of "old-fashioned" conditions which were interesting but not serious. Such were gross œdema of the prepuce, lymphangitis of the penis and painful inguinal adenitis, sangro-purulent discharges, and peri-urethritis generally; conditions which are thought to be associated with a severe type of infection (Pelouze), (Fontana).

*Group 2.*—The number of courses of sulphonamide and the period spent in hospital prior to the penicillin treatment of this group are set out in figs. 3 and 4. The shift to the left which has occurred, as compared with figs. 1 and 2, is entirely due to the earlier exhibition of penicillin in these 100 cases. The complications encountered show little divergence from the characteristics of Group 1 and are therefore omitted.

*Group 3.*—The analysis of this group shows the number of courses of sulphonamide used, the period of stay in hospital, etc., but in addition the inquiry gives information regarding the number of relapses after sulphonamide treatment, the condition of patients at final test of cure and the incubation period of the disease.

(a) The incubation period was known in 80 per cent of cases. The average period was six days, but most cases distributed themselves more or less equally over the period three to seven days inclusively. There was nothing unusual, therefore, in the incubation period.

(b) The number of courses of sulphonamide used is shown in fig. 5. The average lay between two and three courses, and only 25 per cent of patients were apparently cured by one course (*cf.* Campbell). For interest, a calculation of the number of relapses after sulphonamide was made, and this is set out graphically in fig. 6. (For the sake of clarity the number of relapses has been taken to signify the number of courses of sulphonamide throughout which the gonococcus persisted.)

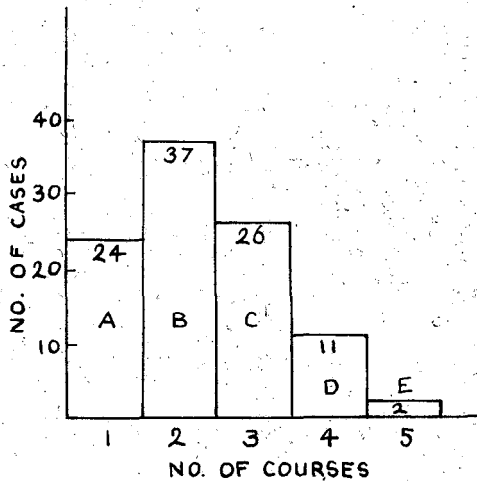


FIG. 5.

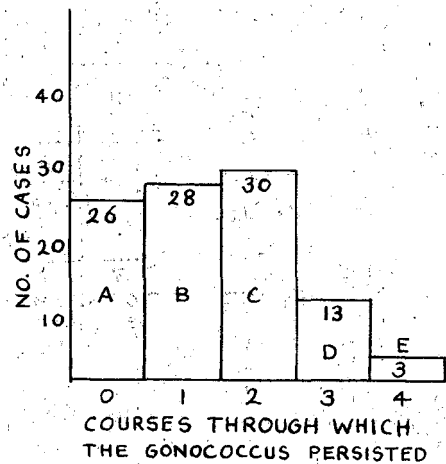


FIG. 6.

Theoretically, columns A, B, C, D, E of fig. 6 should be identical with columns A, B, C, D, E of fig. 5 if sulphonamide were continued course after course until the urethral smear was free of the gonococcus. Thus if 28 per cent of cases failed after one course (col. B, fig. 6), one would expect 28 per cent cases to receive two courses (col. B, fig. 5). In fact, 37 per cent were given two courses. Probably, then, this 9 per cent were given their second course on account of a persisting non-gonococcal discharge. Similarly 30 per cent failed to be rid of gonorrhœa after two courses but only 26 per cent received three courses (col. C). In 4 per cent of these patients, therefore, the medical officer considered it futile to persevere beyond two courses. The same applies to columns D and E. On the whole, however, less than 10 per cent of cases received sulphonamide for other reasons than the persistence of their gonorrhœal infection. Thus, the tables illustrating the number of courses of sulphonamide used (figs. 1, 3, 5) give a true indication of sulphonamide resistance and not of sulphonamide wastage.

(c) The average time a patient remained in hospital was five weeks. This figure was

found to be more or less constant in V.D. clinics in various localities. The analysis of this period spent in hospital is shown in fig. 7.

Such an average of five weeks is comparable to the state of things in the last war, before sulphonamide had been dreamt of. The figure for Palestine and Egypt in 1940 was ten days, and the figure for Tripoli in 1943 was fourteen days. A glance at fig. 7 reveals that 17 per cent of patients remained in hospital for more than two months.

(d) The complications which occurred are listed thus (total of 300) :—

Prostatitis (acute) . . . . .	5 (1.7 per cent.)
Prostatitis (subacute or chronic) . . . . .	140 (47 per cent.)
Vesiculitis (all stages) . . . . .	2 (0.7 per cent.)
Epididymitis (acute) . . . . .	12 (4.0 per cent.)
Epididymitis (chronic) . . . . .	6 (2.0 per cent.)
Peri-urethral abscess . . . . .	1 (0.3 per cent.)
Tysonitis, or para-urethral duct infection . . . . .	4 (1.3 per cent.)
Œdema of penis . . . . .	3 (1.0 per cent.)

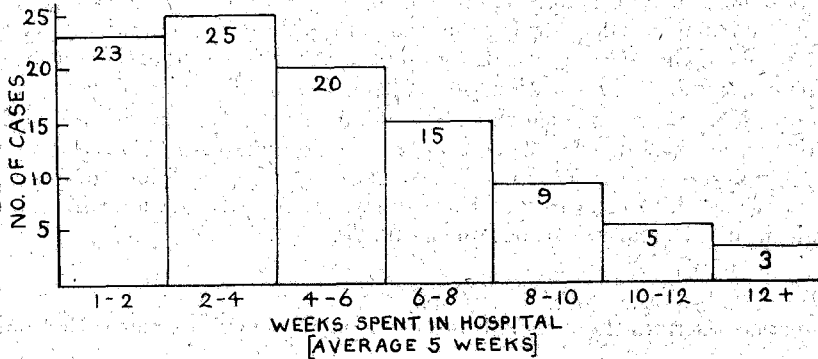


FIG. 7.

Apparently 127 cases (42 per cent) were uncomplicated. Comment must be made concerning the figure of prostatic involvement, 47 per cent being too low an estimate. Many medical officers, following out more orthodox teaching, were unwilling to examine the prostate gland during a patient's surveillance period, so that many a case of prostatic involvement went unrecorded in the material from which the above figures were drawn. Personal observation of his own cases convinced the writer that seven out of every ten of his patients had suffered some degree of prostatic inflammation. So true is this that where a patient was cured with one course of sulphonamide, subsequent examination failed to show abnormality in the prostatic smear, but where a patient resisted one or more courses of sulphonamide he exhibited an abnormal prostatic smear, apart from any more serious complication he may have suffered. With some few exceptions this relationship between sulphonamide resistance and posterior urethral complication held good. Assuming the truth of this observation, the one characteristic of the Italian gonorrhoea was the high proportion of early complications.

(e) The conditions found at final test of cure, after a minimum surveillance period of three months, were disappointing. Almost 10 per cent of candidates were found unsatisfactory, 7 per cent on account of persisting prostatitis and 3 per cent on account of urethral stricture of mild degree. In no case, however, was the gonococcus found in the prostatic-vesicular smear. An analysis of 70 cases of prostatic infection which were carefully followed-up revealed that it required seven or eight weeks after discharge from hospital before the prostatic smear returned to normal. It seemed immaterial whether the original prostatic infection was gonococcal or non-gonococcal. This period is not unusually long.

It was noted at final test of cure that T.A.B. shock therapy had been employed in 40 per cent of all cases to reinforce sulphonamide.



## COMMENTARY.

The figures quoted above reveal that the type of gonorrhœal infection acquired by British troops in Italy was characterized by a high rate of local complications and by sulphonamide resistance. This has given rise to a good deal of comment already and to much speculative thinking. The subject is well discussed in a recent Editorial of the JOURNAL OF THE ROYAL ARMY MEDICAL CORPS. The writer himself believes that the organism was one of unusual virulence and that this was responsible for the frequency of complications seen among men presenting themselves for the first time at hospital.

According to the Italian specialists, the disease in Italy was resistant to sulphonamides for long before British troops came to the peninsula. They agree that under stress of war conditions treatment of both men and women was often inadequate, mainly because of shortage of supplies of sulphonamide drugs, and that treatment by drug stores was common. Prostitutes were known to treat themselves. And yet in Eritrea, some years before, where these conditions also obtained, gonorrhœa was not sulphonamide-resistant. But Eritrea never suffered such destitution as the population of Italy itself.

On the fact of virulence Italian doctors held divergent views. Most agreed that the disease had become more virulent during the years of the German occupation. They believed this was the result of the swift spread of the disease through a new and hitherto uninfected section of the community. Destitution, which had been on the increase during these years, had reached tragic proportions when the Allies assumed the responsibilities of civil administration. Prostitution had developed on a scale hitherto unknown. To buy a loaf of bread in the black market cost twice an artisan's daily wage. Conditions of semi-starvation literally drove women into the streets. Unfortunately this is a situation which may have to be faced again in other countries of occupied Europe.

## SUMMARY.

(1) This paper describes the unusually severe type of gonorrhœa met with among British troops in Italy.

(2) Evidence is produced to show that the disease was resistant to sulphonamides to a degree hitherto unknown.

(3) Comment is made regarding this resistance, the possibility of hypervirulence, and the opinions of Italian medical men on these subjects.

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