SIMPLIFIED PENICILLIN TREATMENT OF LYMPHOGRANULOMA INGUINALE AND OTHER VENEREAL DISEASES IN WEST AFRICAN TROOPS

By R. R. WILLCOX, Lieut.-Col. R.A.M.C., M.B.B.S.(Lon.)

(Late Command Venereologist, West African Command.)

The effect of penicillin in the cure of syphilis and gonorrhoea is now well established, but it is recognised that in those places where trained orderlies are scarce the large number of injections required by standard treatments are difficult to organise.

In February 1945 sufficient supplies of penicillin were made available from the general research pool in West Africa to allow for the investigation of possible methods for reducing the standard course.

American investigators have previously shown that when an emulsion of penicillin in oil is used for injection purposes, the effects are more prolonged than with a saline solution. Findlay and Hill (1945) have used such a method in the treatment of yaws.

For this technique 100,000 units of penicillin are dissolved in the minimum amount of sterile physiological saline and to the solution is added 5 c.c. of sterile ground nut oil to which has been added a very small amount of beeswax. The emulsion is well shaken before injection and causes little or no pain. This emulsion has been used in the treatment of three diseases in West African troops: (a) Gonorrhoea, (b) Syphilis, and (c) Lymphogranuloma Inguinale.

Gonorrhoea

For the treatment of this disease the course adopted was 100,000 units in saline injected intramuscularly, followed 3-4 hours later by 100,000 units in ground nut oil. The last trace of penicillin has disappeared from the blood 15 hours after the first injection and from the blood findings it would seem that the clinical results would probably be disappointing. Typical results of penicillin blood estimations are shown opposite.

Twenty-eight cases of gonorrhoea in African soldiers were treated by this method; all except 3 received previous sulphonamide treatment, 16 having had two more courses without response; 10 patients had, in addition, received intravenous injections of T.A.B.

Of the 28 cases one failed to respond but cleared up on further sulphapyridine and intravenous T.A.B.; the others all cleared up rapidly without other treatment apart from irrigations with 1/8000 potassium permanganate.

The average time for the 27 cases to clear was

4.3 days, the longest being 11 days; there was no known case of relapse.

Syphilis

Thirteen cases of primary syphilis were treated by the same technique as used for gonorrhoea, except that the two injections each of 100,000 units were given each day for 12 days.

The total penicillin for each case was 2,400,000 units. All the patients were dark ground positive for *Spirochaeta Pallida*: 7 had positive Kahns and Ides.

The primary sores healed on an average of 13.2 days; one case had not healed after 17 days: this patient cleared up after two injections of neoarsphenamine.

Of the six seronegative cases before injection, none showed positive Kahn three weeks after the sores had healed.

Of the seven with seropositive reactions, 5 remained in the same condition, one was worse (20 Kahn units increasing to 40 units), while one was much improved.

A later examination of these patients was not possible.

Lymphogranuloma Inguinale

Experiments as to the effect of penicillin on the virus of lymphogranuloma inguinale, and cases so far recorded have indicated that penicillin may be ineffectual in this condition.

Twenty-five cases in Africans have been treated by penicillin in oil as described above, while two cases in Europeans were treated by very much larger doses of penicillin in saline by orthodox methods.

Of the 25 African cases, all were males and were the routine hospital admissions. Symptoms had been present in 23 of them for one week or less, and seven of them gave a history of a previous bubo in the last 3 years.

Frei tests were done and 10 of them were treated by a single injection of 100,000 units in oil. Five cleared up (50 per cent) in an average of 6.1 days while there were 4 immediate failures and one relapse requiring sulphonamides, intravenous T.A.B. and anthiomaline, etc. Fifteen of them were treated by the double injection consisting of 100,000 units of penicillin in saline followed by

100,000 units of penicillin in oil 3-4 hours later. Of these, 10 cleared up (66 per cent) taking an average of 5 days to do so. There were 3 failures and 2 relapses requiring further treatment by sulphonamides, etc. Aspiration was performed on any fluctuant glands.

The cases if divided into clinical groups such as small hard tender, hard diffuse tender, fluctuant, etc., did not show any greater tendency to respond to penicillin in any particular group.

The effect of the penicillin on these cases was not dramatic, the tenderness of the glands being still markedly present as long as 48 hours after the injections.

The two European cases were treated by 1,000,000 units of penicillin in saline: 40,000 units being given 3 hourly for 3 days.

Both cases had marked tender non-fluctuant diffuse enlargement of the left inguinal glands with no history of sore. There had been no previous attacks and symptoms had been present 3 days and 9 days respectively. In the latter the skin was reddened over the glands.

Improvement in both cases was marked after 24 hours, and within 48 hours most of the tenderness had gone, while in 72 hours the glands were very definitely reduced in size.

The first patient was fit for discharge from hospital in 4 days, while in the other the glands had diminished remarkably in size and were no

longer tender in that time, though there was still an erythema of the skin over the glands. The patient was fit for discharge from hospital in 6 days.

Conclusions

(a) *Gonorrhoea*.—The two-injection technique appears to be effective in the case of African soldiers. The one morning treatment may be of use in the future when at last a drive is made on heavily infected areas of the world like West Africa where a very large number require treatment as out-patients in the smallest possible time.

(b) *Syphilis*.—While clinical cures are obtained by the method described, it is too early yet to express an opinion as to the ultimate result.

(c) *Lymphogranuloma Inguinale*.—The results of the one- or two-injection methods are not superior to those obtained by sulphonamide therapy. However, it seems that this is because the dose is too small, and if 1,000,000 units are employed as an orthodox routine, a satisfactory clinical cure results. From these experiments it can be said that clinically speaking at any rate, penicillin will influence lymphogranuloma inguinale.

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