ABSTRACTS

This section of the Journal is published in collaboration with the two abstracting Journals, Abstracts of World Medicine and Ophthalmic Literature, published by the British Medical Association. The abstracts are divided into the following sections: Syphilis (Clinical, Therapy, Serology, Pathology, Experimental), Gonorrhoea, Non-Gonococcal Urethritis and Allied Conditions, Chemotherapy, Public Health and Social Aspects, Miscellaneous. After each subsection of abstracts follows a list of articles that have been noted but not abstracted. All subsections will not necessarily be represented in each issue.

SYPHILIS (Clinical)


In the author's view congenital syphilis can be prevented by adequate antenatal treatment of the syphilitic pregnant woman. However, during the 5-year period 1950-4 in the area covered by the Manchester Regional Hospital Board, where there is an estimated total population of almost 4½ million, congenital syphilis was diagnosed in 139 children under 5 years of age. To determine the possible causes of failure to prevent the disease, the records of these children and of their mothers were studied in detail. Some thirty cases were excluded because the diagnosis was based on the results of neonatal tests or tests on cord blood in which no allowance had been made for the "spill-over" of maternal reagin to the infant's circulation.

In 75 of the cases the mother had not undergone any antenatal serological test, the infection being discovered when signs of the disease developed in the infant or when serological tests were carried out on the mother in a subsequent pregnancy or as a possible family contact. Of these 75 mothers, ten had previously defaulted during antisyphilitic treatment, three had each lost a child from syphilitic infection, and one had had a stillbirth the cause of which was not investigated, while the husband of another had been treated for secondary syphilis but had refused to bring his wife to the clinic for examination. Thus, fifteen of the cases could have been prevented if an adequate history had been obtained, even though no antenatal test was performed.

In 34 cases a blood test was carried out during the antenatal period, and failure to obtain a healthy child was due to the following:

1. treatment begun less than 3 months before delivery (sixteen cases);
2. mother defaulted after treatment started (six cases);
3. no action taken although the response to the blood test was positive (two cases);
4. treatment refused (one case);
5. test carried out too late for treatment to start before delivery (three cases);
6. negative response to antenatal blood test.

Discussing the findings, the author points out that many of these cases of congenital syphilis could have been prevented if a blood test had been carried out as a routine during the antenatal period. In some cases, however, the maternal infection was discovered too late for treatment to be effective, or premature labour or default of the patient reduced the time available for antisyphilitic treatment. Closer liaison between the maternity services and the venereologist might reduce the number of such cases. The problem of insensitivity of the standard serological tests for syphilis is a complex one, and it is suggested that in each case at least two tests should be performed, preferably in a central serological laboratory, in order to secure as high a standard of specificity as possible.


Among 1,330 patients suffering from syphilis [see Macfarlane, Swan, and Irvine, Brit. med. J., 1956, 1, 827] who were investigated for evidence of cardiovascular disease, clinically, by cardioscopy, and by electrocardiography, 61 were thought to be suffering from uncomplicated syphilitic aortitis, 37 of them being men and 24 women, their ages ranging from 36 to 73 (average 56) years. In 24 cases, all in men, the probable duration of the infection was known, and varied from 13 to 37 years, with an average of 27 years; ten of the patients had had some treatment at an early stage of infection, but only two had received more than one course of treatment with arsenicals.

The diagnosis was based on fluoroscopic evidence of dilatation of the aorta, observed on more than one occasion and in the absence of aortic incompetence. Hypertensive patients were excluded unless there was calcification of the ascending aorta (two cases) or unless the patient subsequently developed aortic incompetence, in which case the diagnosis was made retrospectively (two cases). In 47 cases the patient was free from symptoms; the remaining fourteen patients had symptoms such as breathlessness or pain in the chest which may or may not have been due to aortic disease. At the time of the latest assessment (1954) 51 of the patients were still alive and ten had died; the period of observation varied from 3 to 14 years (average 5-1 years). There appeared to be no significant difference between the survival rate of these patients and that of the general population of the same age and sex. During observation there was evidence of progression in eighteen cases (30 per cent.), fifteen patients developing evidence of aortic incompetence and two showing evidence of increased aortic dilatation; the remaining patient was thought to have an aortic diastolic murmur which, however, subsequently disappeared. In only five of these cases was the evidence of progression accompanied by increase in disability.
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nami, breathlessness in three and angina of effort in two.

The electrocardiogram was normal in all the cases initially, but in six of the eighteen cases showing progression the tracing later became abnormal. The pattern of left ventricular strain appeared in three of the cases in which aortic incompetence developed, and in two others with earlier symptoms of angina there was evidence of cardiac infarction, while in one case right bundle-branch block developed. The average interval before progression was detected was 3.4 years after diagnosis. In only one case was death due to cardiovascular syphilis, the patient having developed aortic incompetence. The remaining nine died from other causes. There was some evidence to suggest that those with symptoms at the time of diagnosis and those with a greater degree of aortic dilatation fared worse than the others. There was no evidence that age, sex, occupation, duration of infection, the presence of various physical signs, or the amount of treatment given after diagnosis had any appreciable effect on the liability to progression. Progression appeared to occur in an abnormally high proportion of cases in this series, the incidence of progression in five similar reported series ranging from 6.5 to 19.1 per cent.

A. J. King


Although radiological recognition of calcification of the ascending portion of the aortic arch is well known to be suggestive of syphilitic aortitis, the authors believe that insufficient attention has been paid to this sign. In this paper from the Royal Victoria and Women's Hospitals, Belfast, they review nineteen cases of syphilis in which the sign was present. Of the nineteen patients, of whom thirteen were men and six women and whose age varied from 51 to 75, only nine complained of symptoms related to the cardiovascular system, these having been present from 4 months up to 10 years. The duration of infection was not known in all cases, but appeared to extend from about 20 to 42 years.

Standard serological reactions for syphilis were positive in only twelve cases, and in five remained positive in spite of treatment. Radiologically, there was evidence of calcification in the ascending aorta in all cases; in ten it was confined to the ascending aorta, in six it extended into the aortic valve, and in nine it involved other parts of the aortic arch. Aneurysmal widening was present in four cases. The authors express the view that whether or not calcification due to atherosclerosis is present in the aortic valve or in the more distal parts of the aortic arch, "calcification of the first part of the ascending aorta is highly suggestive of an underlying or predisposing syphilitic lesion".

A. J. King


In this article are described the results of cardiological examination of 1,330 patients suffering from syphilis and seen at the General Hospital, Newcastle upon Tyne, during the period May, 1945, to December, 1951. In the investigation, which included physical examination, cardioscopy, and electrocardiography, 969 patients were examined before antisyphilitic treatment was given, 79 during such treatment, and 282 during surveillance after treatment. Those with signs of cardiovascular involvement were re-examined each year, if possible, up to 1954.

Of the total number of patients, of whom 676 were men (average age 47) and 654 were women (average age 43), 163 were suffering from early contagious syphilis, 265 from neurosyphilis, 780 from late syphilis which was either latent or involving systems other than the nervous system, and 97 from congenital syphilis; the remaining 25 were examined because they had a past history of syphilis. Evidence of cardiovascular syphilis was found in 202 patients (15 per cent.), 66 of whom were also suffering from neurosyphilis and 132 from other types of late syphilis. Of the remaining four patients, one was found to have aortic incompetence 4 years after apparently successful treatment of secondary syphilis. Fluoroscopy showed no abnormality of the aorta, and the diagnosis of syphilitic aortitis was based on the presence of aortic incompetence [a conclusion which is open to question]. Of three patients with congenital syphilis who were considered to have cardiovascular lesions, in only one was the evidence clear that the abnormalities found were due to the syphilis.

Syphilitic cardiovascular disease was commoner in men (143 cases or 70 per cent.) than in women (59 cases or 29 per cent.). Of these 202 cases, 45 were considered to have evidence of uncomplicated aortitis, 124 of aortic incompetence, 31 of aortic aneurysm, and two of syphilitic heart block. The incidence of aortic incompetence, namely, 9.3 per cent. of the total number of patients examined, was exceptionally high in comparison with an average incidence of 3.8 per cent. in eight other similar surveys reported in the literature. A large number of the patients with aortic incompetence had no symptoms of cardiovascular disease and had led active lives, remaining apparently well for many years. Of 201 patients with cardiovascular syphilis tested serologically, 189 (94 per cent.) had strongly positive serological reactions at the time of diagnosis, four (2 per cent.) gave doubtfully positive reactions, and in eight (4 per cent.) the serological reactions were repeatedly negative. Of 27 cases which came to necropsy the diagnosis of cardiovascular syphilis was confirmed in all but one instance. In 214 cases in the series there was evidence of cardiovascular disease which was considered to be non-syphilitic.

A. J. King


The case report of a 58-year-old man with interstitial keratitis, ocular paralysis, and clinical features of biologically stabilized tabs all after arthropathy. The
Wassermann reaction was negative, and the Nelson reaction was negative in the cerebrospinal fluid and 100 per cent. positive in the blood. The interest lies in the recurrent and prolonged evolution of the (probably) congenital syphilis, from the vascular and not the tabetic origin of the arthropathy. The priority of the Nelson test is stressed.

S. Vallon

Normal and Argyll-Robertson Pupils in Convulsive Attacks.


A pathological description is followed by a discussion on the differential diagnosis of pupillary reactions in organic convulsive attacks.

W. Leydhecker


A further report on the Tuskegee study of untreated syphilis in the male negro, which was begun in 1932, is presented. No serological data are available for the period 1932 to 1939, but since 1939 serological examinations have been attempted annually, the last being completed in 1954. The present analysis is confined to the results obtained with the Kahn standard test for syphilis, which has remained relatively unchanged during the 22-year period. The subjects included 408 men originally selected as syphilitic in 1932, ten of 201 controls who later acquired the disease, and thirteen syphilitics added in 1939. Of the 431, 176 (40.8 per cent.) were dead and only 93 (36.5 per cent.) of those presumed to be alive were examined in 1954. Altogether, 299 were followed up serologically for varying periods, 76 died before they could be re-examined, and 56 were untraced.

Among the 175 untreated patients—that is, patients who had no antisyphilitic treatment or fewer than 3 injections of arsenic—the rate for serological reversal to negative was lowest in those aged 25 to 39 years with syphilis of less than 15 years duration, the highest rate being found in patients aged 55 to 69 years with syphilis of 30 to 44 years duration. The more recently acquired the infection, the longer the time required for serological reversal to negative. However, only a very little treatment was necessary to reverse this pattern. Patients aged 25 to 39 years with syphilis of less than 15 years' duration treated with 3 to 20 arsenic injections had the highest seronegativity rate. Similar treatment given to patients 40 to 54 years of age with syphilis of 15 to 29 years' duration had no apparent effect. Leslie Watt


Is an Early Diagnosis Possible in Cardiovascular Syphilis?


Radiological Studies of the Development of the Centres of Ossification in Syphilitic Foetuses and Newborn Infants.


Tuberculosis and Syphilis. A Record of Four Cases.


SYPHILIS (Therapy)


In the hope of finding a substitute for penicillin in the treatment of cases of early syphilis with allergic reactions, oxytetracycline was tried at the Davidson County Health Department, Nashville, Tennessee. Crystaline oxytetracycline in a solution containing magnesium chloride and 2 per cent. procaine hydrochloride was given by intramuscular injection to sixteen patients with early syphilis (primary infection in two and secondary in fourteen). The dosage in fifteen cases was 200 mg. twice daily for 10 days and in one case it was 100 mg. twice a day for 3 days followed by 200 mg. twice a day for 7 days (total 3.4 g.).

All lesions healed rapidly after the start of treatment. Treponema pallidum disappearing in an average of 40
Although the author defines in only a few cases treatment was a failure: there was a mucocutaneous relapse after 4 months in one case and serological relapse in two cases after 6 and 10 months respectively; in one case, in which initially the cerebrospinal fluid findings were positive, there was an inadequate response, as indicated by a persistently high serological titre, although the cerebrospinal fluid findings were negative after 7 months. One patient with secondary infection was delivered of a full-term normal infant 119 days after the start of treatment; response to the VDRL test in this infant continued to be negative after 2 months. There were no major reactions to this treatment.

The results in this small series of cases indicate that oxytetracycline given intramuscularly is at least as effective in the treatment of early syphilis as are the other broad spectrum antibiotics; its efficacy, however, does not approach that of penicillin. Further investigation with a higher total dosage is recommended.

Leslie Watt


The investigation described in this paper from the General and Temple University Hospitals, Philadelphia, was undertaken to evaluate the therapeutic efficacy of penicillin in late latent syphilis, a review of the literature indicating that such investigation was necessary. The author defines late latent syphilis as asymptomatic syphilis of more than 4 years' duration in which there is no clinical or laboratory evidence of the disease except for a positive response to serological tests. In this investigation the Kolmer complement-fixation test and the Kahn and VDRL quantitative serum tests were performed. All patients known to have congenital syphilis were excluded, and every precaution was taken to exclude biological false positive reactions.

A total of 316 patients, the majority of whom were females and about one-half between 20 and 50 years of age, were followed up for periods of 1 to 3 years after initial treatment. Penicillin with aluminium monostearate was given in a dosage per course of between 3,600,000 and 6,000,000 units. The best results, as indicated by the number of patients who gave a negative response to serological tests or showed a satisfactory titre (4 to 8 Kahn units), were obtained in those who had previously received adequate bismuth and arsenical therapy (28 out of 38 patients). Next came those who had had adequate metallotherapy (36 out of 60) and those who had not previously been treated (103 out of 188). Treatment was unsatisfactory in 23 of the thirty patients who had had penicillin therapy previously—that is, the retreatment group. The author states that after the titre had fallen to a satisfactory level further treatment had no appreciable effect. Altogether there was a negative response or a satisfactory titre after treatment in 170 of the 316 patients (53.8 per cent.), although before treatment the titre had been satisfactory in only 93 (29.5 per cent.).

The author concludes that penicillin is as effective in the treatment of late latent syphilis as arsenic and bismuth. There was no progression of the disease in any of the patients during the time of the study.

Leslie Watt


**SYPHILIS (Serology)**


Seventy-three per cent. of 400 pregnant women as compared to 61 per cent. of 400 non-pregnant women with reactive STS were shown to have negative TPI tests. The difference of 12 per cent. is statistically significant.

Seventy-nine of 127 sera from pregnant women with reactive STS exhibited reactivity in one or more of the STS performed on the sample of serum submitted for the TPI test, while 36 had become nonreactive, and twelve showed anticomplementary reactions.

The standard serologic tests for syphilis on serum from 295 pregnant women on whom the TPI was negative indicate a lower specificity for lipoidal than for cardiolipin antigens employed in flocculation tests.


The validity, within certain limitations, of the *Treponema pallidum* immobilization (TPI) test on blood is now generally accepted. The authors have therefore attempted to evaluate the validity of this test on the cerebrospinal fluid (CSF), and in this paper report the results of the TPI test and a standard serological test...
for syphilis on 376 specimens of CSF from 324 patients, most of whom were attending the Columbia University–Presbyterian Medical Centre, New York. The same tests were also performed on the blood of all but 31 of these patients.

Of the total number, 173 patients were diagnosed as having latent syphilis [but no results of the TPI test on the CSF in this group are given], and 54 patients had clinical evidence of neurosyphilis (26 cases of tabes, seven of paresis, twelve of meningo-vascular syphilis, and nine of primary optic atrophy). Positive or doubtful TPI test results were obtained in all but eight cases, while five patients with tabes gave a negative TPI reaction with the CSF but a positive reaction with the blood. The same pattern was found in one case of treated paresis and in two patients with optic atrophy. In 46 cases a diagnosis of asymptomatic neurosyphilis was made, the TPI test on the CSF giving a positive result in 36 and a doubtful result in four. The six remaining patients, five of whom had had antisyphilitic treatment, showed a negative TPI reaction in the CSF, while the standard test on the CSF and both tests on the blood gave positive results.

Thus in the combined group of 100 patients with neurosyphilis, the TPI reaction in the CSF was negative in fourteen cases. In the same group the standard test result on the CSF was negative in sixteen instances, but in twelve of these the TPI reaction with the CSF was positive. The authors state that all the positive TPI test results on the CSF were in agreement with the clinical diagnosis and suggest that this finding is good evidence of neurosyphilis, but point out that failure to demonstrate immobilizing antibody in the CSF does not rule out the diagnosis of neurosyphilis.

Tests on eighteen patients showed that the antibody titre was always lower in the CSF than in the blood. It was also noted that when 49 TPI-positive specimens of CSF were re-tested after deep-freeze storage, three gave negative results at the second examination; two of these specimens had been stored for one month and one for 15 months. This reversal of the reaction is probably related to a low titre of antibody. A. E. Wilkinson


Work at the Walter Reed Army Institute of Research, Washington, D.C., has shown that virulent Treponema pallidum, which is normally stained by methylene blue, becomes resistant to such staining when incubated with syphilitic serum and complement. The authors have therefore explored the possibility of utilizing this phenomenon in the diagnosis of syphilis. Their method is as follows.

A mixture of serum, a suspension of living treponemes (Nichols strain), and active and inactive complement is incubated as in the treponemal immobilization (TPI) test. About 0.01 ml. of the reaction mixture is then placed on a slide, an equal volume of a stain composed of 0.1 per cent. methylene blue and 0.025 per cent. sodium carbonate in distilled water is added, and a cover-slip applied. The preparation is left at room temperature for 15 min. and examined by dark-ground illumination. The percentages of stained treponemes in the presence of active complement and in the mixture with inactivated complement as a control are counted, from which the "specific dye resistance" (SDR) is calculated in a similar way to the calculation of specific immobilization in the TPI test. Sera showing more than 50 per cent SDR are assessed as reactive, from 21 to 50 per cent. as weakly reactive, and less than 21 per cent. as non-reactive. After the reading, tests to demonstrate the presence of residual complement are performed as in the TPI test.

Application of the method to examination of syphilitic rabbit serum showed that active complement was required for the manifestation of dye resistance and that the titre by this technique paralleled that of immobilizing antibody. Removal of reagin from the serum by absorption with cardiolipin antigen had no effect on the dye-resistance titre. Duplicate tests on 169 selected sera from healthy subjects, patients with syphilis, and patients with diseases other than syphilis showed very close agreement between the results of the TPI test and the dye-resistance test. Attempts to use suspensions of T. pallidum killed by a variety of treponemical agents were generally unsuccessful. It was noted that exposure to a temperature of 56°C. for 10 min. frequently immobilized the treponemes without altering their capacity to resist the dye, but this effect was not predictable. A. E. Wilkinson


Writing from the Faculty of Medicine, Lyons, the authors state that the majority of new cases of syphilis are at present diagnosed in the latent stage, and cite a number of reports in support of this contention. The serological tests therefore assume an even greater importance than before, and the treponemal immobilization (TPI) test has proved to be one of the most reliable.

They then report the results obtained with standard tests for syphilis performed on 424 patients, various serological tests being carried out on each specimen of serum. These indicated that 279 of the patients had latent syphilis, while 145 gave biological false positive reactions. When the TPI test was performed on the sera of these patients the result was positive in 249 (89.3 per cent.) of the 279 cases of probable latent syphilis and negative in thirty cases (10.7 per cent.). Of the 145 cases of presumed false positive reactions the TPI reaction was negative in 110 (75.9 per cent.) and positive in 35 (24.1 per cent.). Thus, assuming that the TPI test is both very specific and highly reproducible, its systematic use prevented diagnostic error in 65 out of the 424 cases, thirty patients thought to have latent syphilis being shown to be biological false positive reactors, while 35 patients thought to be non-syphilitic were shown
to have the disease. Details and results are given of the various standard serological tests employed, and the possible aetiology of the 140 biological false positive reactions is considered.

The authors then discuss the use of the quantitative TPI test and claim that this test, performed at regular intervals during the follow-up period, provides the best guide to the efficacy of antisyphilitic treatment in latent syphilis. Finally they describe studies in which the quantitative TPI test and an intradermal reaction with a preparation of dead treponemes was used in an attempt to assess the duration of the syphilitic infection in cases of latent syphilis.

**R. D. Catterall**


The author comments favourably on the recommendation of the Expert Committee of the World Health Organization that the results of serological tests for syphilis should be recorded simply as positive, negative, or doubtful, but points out that the clinician still needs a quantitative test in order to assess progress and the efficacy of treatment. At the Ospedale S. Niccolò, Siena, he carried out the quantitative VDRL micro-flocculation slide test with the cardiolipin antigen on sera from 32 patients with neurosyphilis before and after treatment, the results, where positive, being presented in the form of a graph, the dilution of serum being plotted as the abscissa and the degree of positivity (ranging from 1 to 5) as the ordinate. The other tests which were carried out on each serum included the Wassermann M.K.R.II and citochol reactions, but the results of these tests did not show the effect of treatment so clearly as did those of the VDRL test.

The simple graphic method of presentation of the results of the VDRL test in various dilutions shows clearly that sera giving the same result undiluted may give quite different titres of positivity when diluted. It also shows the occasional zone phenomenon, when serum at one dilution gives a higher degree of positivity than the undiluted serum, this peak disappearing under treatment. The test is technically easy, can be applied to cerebrospinal fluid, and uses a chemically well defined antigen. The sera are diluted in tubes, and a drop from each dilution is mixed on a slide with a drop of antigen, agglutination being read both macro- and microscopically.

**F. Hillman**


In a comparative study carried out at the Municipal Serological Institute, Bochum, Germany, 1,111 sera were tested with cardiolipin antigen by means of the flocculation and Kolmer complement-fixation reactions and the results compared with those of the classic Wassermann, Meinicke, and citochol reactions. The Wassermann test proved the least sensitive, while the two reactions using cardiolipin antigen were both more sensitive and specific than the other tests used. It is recommended that both these tests should become routine procedures. The samples of serum originated from treated syphilitiks in 432 instances, but since the remaining 679 specimens were received without clinical details the problem of false positive reactions could not be assessed.

**G. W. Csonka**


The Reiter culturable treponeme was grown at the Institut Alfred Fournier, Paris, in Brewer’s medium or glucose broth enriched with 10 per cent. of serum. After a week the organisms were harvested, washed in saline, and finally re-suspended in 0-3 per cent. phenol-saline. This suspension was used undiluted or at a low dilution as the antigen in a cold complement-fixation technique of the Kolmer type. As it was anticomplementary, great care was needed in the adjustment of the haemolytic system. In a series of tests carried out in parallel the results obtained with the above preparation, with Gahtgens’ “palligen”, and with the Italian preparation “pallignost” were identical.

The treponemal immobilization (TPI) test, the Wassermann reaction (WR), and the Reiter complement-fixation (CF) test were carried out in parallel on 511 sera, with 410 of which the three tests gave concordant results. With 25 sera the TPI reaction was positive and the Reiter CF reaction negative, whereas with 48 the TPI reaction was positive and the WR negative. Taking the TPI test as a yardstick, this suggests that the Reiter CF test is more sensitive than the WR. With fourteen sera (2-7 per cent.) the Reiter CF reaction was positive but the result of the TPI test was negative; in contrast, 34 sera (6-65 per cent.) gave a positive WR and a negative TPI reaction. On this basis it is concluded that the Reiter CF test is of definitely higher specificity than the WR. [No clinical details are given regarding the source of the sera tested.]

When rabbits and mice were inoculated with the Reiter treponeme there was a rise in titre in the WR and the Reiter CF reaction, but the animals did not develop immobilizing antibody. When the Nichols strain was used for inoculation, however, all three reactions became positive.

**A. E. Wilkinson**


Reiter’s Treponemal Antigen in the Sero-diagnosis of Syphilis. (L’antigene treponemique de reiter dans le serodiagnostic de la syphilis.) HAMELIN, A., and VAISMAN, A. (1956). Presse méd., 64, 1229. 10 refs.


SYPHILIS (Pathology)


SYPHILIS (Experimental)


The authors describe in great detail an experiment carried out on eight non-syphilitic men, 49 with treated syphilis, and five with untreated latent syphilis, all of whom were volunteers from Sing Sing Prison, New York State.

First, 24 of the patients were inoculated with 50 x 10⁴ heat-killed Treponema pallidum and followed up by means of bi-weekly clinical and serological examinations for 6 weeks. All 62 patients were then inoculated with virulent T. pallidum (Nichols strain). The 54 syphilitic subjects received 10⁶ organisms, while the eight non-syphilitic patients were each given four doses, of 10, 10⁵, 10⁶, and 10⁷ organisms respectively, at four different sites. All injections were given intracutaneously into the skin of the forearm. Treatment was withheld for 4 months unless dark ground positive lesions developed or there was a sustained rise in the standard serological test (STS) titre, when 1–2 mega units penicillin in aluminium monostearate was administered daily for 5 days.

As calculated by the Bliss dose-response technique, the 50 per cent. infectious dose (ID₅₀) in the non-syphilitic individuals was found to be approximately 57 organisms. A parallel experiment in rabbits in which the same suspension was used gave an ID₅₀ of 23 organisms, showing that the Nichols strain of treponeme (which has been maintained by passage in rabbits since it was first isolated in 1912) still retains a high virulence for man.

Of the 54 syphilitic patients, two were discarded from the experiment as penicillin had to be given for other reasons before the result of the inoculation was known. The five patients with untreated latent syphilis showed no clinical or serological response. All the remaining patients had received adequate treatment before being accepted for the experiment. Of eleven who had been treated for early syphilis, nine developed dark ground (DG-positive) lesions and two DG-negative lesions. The STS titre rose in all eleven cases, and it was noted that both the STS and the treponemal immobilization (TPI) titres rose more rapidly than in the non-syphilitic controls. Of three patients who had been treated previously for re-infections, one developed a DG-positive and one a DG-negative lesion, the STS titres rising in both, while the third patient showed no clinical or serological response. Out of 26 patients with treated late latent syphilis, thirteen showed no response to the inoculation and three further patients developed DG-negative lesions without any rise in the STS titres. Ten patients were thought to have been re-infected; all showed a rise in STS titre, one a DG-positive lesion, and nine DG-negative lesions, one of these being gummatous. Of five patients who had been treated for congenital syphilis, one showed no response to the inoculation, a DG-positive lesion developed in another, and DG-negative lesions associated with increased STS titres in the remaining three, the lesion being gummatous in one case. One of two patients with treated asymptomatic neurosyphilis showed no response, while the other complained of headaches and nervousness 3 months after inoculation and his spinal fluid showed a slightly raised cell count. There was no change in the STS or TPI titres in this case and it was not possible to confirm the previous treatment he claimed to have received.

In the group of patients who received the preliminary inoculation of heat-killed organisms there was an anamnetic rise in the TPI titre in some patients who had been treated for early syphilis, but there was no rise in the STS titre; no immobilizing antibody developed in the three non-syphilitic control patients who received the same inoculum. The authors suggest that the adminis-
tration of the killed antigen may have had a “booster” effect on the immunity to re-infection of some patients previously treated for syphilis.

[Some eight pages of this paper are devoted to a review of previous work on experimental syphilitic infection in man.]  
A. E. Wilkinson

Effect of Cortisone on Latent Syphilis in Rabbits and Mice.

GONORRHOEA

Treatment of Acute Gonococcal Urethritis in the Male with Single Dosage of Intramuscular Oxytetracycline.

At the San Francisco City Clinic the authors have found an increasing number of patients to be intolerant of penicillin, and especially of those preparations in delayed absorption vehicles which have become “the essential cornerstone of therapy” for gonorrhoea and syphilis. Oxytetracycline given by mouth has been shown to be effective against gonorrhoea, but this has involved the taking of regular doses over a variable period of days, whereas “the ideal medicament is one that can be given in one dosage under supervision”. With the advent of injectable oxytetracycline, therefore, a study of the treatment of acute gonorrhoea with this preparation in a single dose of 400 mg. (given in two separate intramuscular injections) was carried out on 135 male patients. Prostatic or urinary cultures made approximately one and two weeks after treatment were negative on both occasions in seventy cases, in 27 cases a single culture only was made and was negative, and in ten cases failure of treatment was presumed in that a positive culture was obtained after one or 2 weeks, though some of these may have been due to re-infection. The remaining 28 patients failed to return. The cure rate for cases in which two cultures were made after treatment was thus 87-5 per cent., and when cases in which only one culture was made were included the rate was 90-7 per cent. These compare favourably with the results obtained with other injectable antibiotics. The only side-effect of oxytetracycline noted was “burning” at the time and site of injection.

Douglas J. Campbell


The authors list the common objections of the routine use of silver nitrate as a prophylaxis against ophthalmia neonatorum; in their view the sulphonamides are also ruled out because of the increasing incidence of resistant strains of gonococci, while penicillin appears unsuitable for various reasons. However, a non-irritant substance with a wide antibacterial spectrum, which is stable on storage, diffuses readily, and is free from the disadvantages of antibiotics, was found among the quaternary ammonium compounds. The substance “quartamon” has been successfully used in a series of 1,875 intra-ocular operations as an anti-infective agent. Its antibacterial action was tested by a tube method in concentrations of 0-01, 0-05, 0-1 and 0-5 per cent. against Staphylococcus aureus, Escherichia coli, Pseudomonas pyocyanea, and Gonococcus, and also by a disk method with subcultures from the zones of growth inhibition. Concentrations above 0-005 per cent. were 100 per cent. effective against gonococci; it was also shown that up to 5 min. after instillation of a 0-5 per cent. solution of quartamon into the conjunctival sac of the rabbit a bactericidal concentration of the compound was maintained. No irritant effect was noted.

On the strength of these tests one drop of quartamon in the 0-5 per cent. solution was instilled into each eye of 100 newborn babies and 24 hrs later a swab was taken from both eyes. Irritant effects such as lacrimation and mild conjunctival reddening occurred in eight cases, while 10 per cent. of the infants showed a mild conjunctival leucocytosis—compared with the usual 20 per cent. of those treated with silver nitrate. Pathogenic organisms were identified in four cases; one mild case of
ophthalmia was due to a haemolytic staphylococcus. Subsequently quartamon was used in a further series of 250 newborn infants. Mild irritation was noted in twelve cases and organisms were found in six; two cases of non-gonococcal ophthalmia occurred. In one case the mother of a healthy baby was found to suffer from active gonorrhea: yet the baby remained free from infection although only a single drop of quartamon had been given.

F. Hillman


NON-GONOCOCCAL URETHRITIS AND ALLIED CONDITIONS


CHEMOTHERAPY


At the Food and Drug Administration laboratories, Washington, D.C., the authors have compared the antibacterial efficacy of “penicillin V acid” (phenoxymethylpenicillin) with that of benzylpenicillin against 405 strains of *Staphylococcus aureus*. The two drugs were found to be equally effective against 206 of the strains, but the former had a greater activity than the latter against 161 of them, this superiority being most evident against the penicillin-sensitive strains, 123 of which were inhibited by a lower concentration of phenoxymethylpenicillin than of benzylpenicillin; the reverse was true for only twenty strains.

Microbiological plate assays showed that:

1. With 1 per cent. phosphate buffer (pH 6-0) as the solvent, phenoxymethylpenicillin was more active than benzylpenicillin against *Staph. aureus*, but was less active than the latter against *Sarcina lutea*; (2) With pooled normal human serum as solvent, benzylpenicillin was more active than phenoxymethylpenicillin against both organisms, but to different degrees.

The theoretical molecular potency of pure phenoxymethylpenicillin was calculated as 1,695 units per mg. and was shown by iodometric chemical assay to be so in fact.

By means of the plate assay method, with *S. lutea*, the serum and urine concentrations of the two drugs were determined in 30 healthy male subjects at 1, 2, 4, 6, and 8 hrs after ingestion of 200,000 units of each antibiotic by mouth. The serum concentration of penicillin in general was found to be lower than that of benzylpenicillin. Following ingestion of the former drug the proportions of men showing penicillinemia and the range of the serum concentration, in units per ml. (in parentheses) were as follows: at 1 hour, 76-7 per cent. (0.05 to 4-1); at 2 hours, 96-7 per cent. (0.086 to 1-7); at 4 hours, 93-3 per cent. (0.074 to 0.88); at 6 hours, 66-7 per cent. (0.054 to 0.442); and at 8 hours, 20-0 per cent. (0.068 to 0.27). The corresponding figures for benzylpenicillin were: at 1 hour, 100 per cent. (0.071 to 1.75); at 2 hours, 100 per cent. (0.055 to 1.14); at 4 hours, 93-1 per cent. (0.01 to 0.32); at 6 hours, 58-6 per cent. (0.01 to 0.068); and at 8 hours, 10-4 per cent. (0.01 to 0.17). In the case of phenoxymethylpenicillin 23 per cent. of the subjects had no measurable serum concentration of the antibiotic after one hour, although the drug was present in at least three subsequent serum samples taken from each of the seven men concerned. Urinary estimations showed that twice as much phenoxymethylpenicillin as benzylpenicillin was excreted in an active form, a fact which the authors attribute to the over-all superiority in stability and material conservation of the former drug.

Joyce Wright

PUBLIC HEALTH AND SOCIAL ASPECTS


Statistical recording of venereal disease morbidity in New York City has been standardized since 1938, and in the present paper the information collected since then is reviewed. During the period 1938 to 1941—that is, before the advent of penicillin—the number of reported cases of syphilis declined from 37,077 a year (503.6 per 100,000 population) to 27,194 (362.1 per 100,000). However, the number of reported cases of gonorrhea, some 13,000 a year (175.7 per 100,000 population) changed little during the period, while the number of cases of chancroid in 1941 (5.7 per 100,000) was 2½ times higher than it was in 1938.

During the years 1941 to 1945 the incidence of primary and secondary syphilis increased over 40 per cent. and of latent syphilis over 20 per cent., particularly in the younger age groups. The number of cases of gonorrhea also rose steeply from 163-7 to 234-4 per 100,000 population. Peak levels for reported cases of both syphilis and gonorrhea were reached in 1946, after which there was a steady fall. In 1954 the number of cases of syphilis had
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fallen to 19,412 (241.4 per 100,000). Of these, primary or secondary infection was present in only 617 and early latent infection in 2,183. In the same year 12,379 cases of gonorrhea were reported (153 per 100,000). There was a similar decline in the incidence of other venereal diseases, which, however, had never been a great problem in New York City, but the number of cases of nongonococcal urethritis (admitted to Health Department clinics for the first time in 1951) rose to 1,238 cases (15.3 per cent. of all cases of urethritis).

The success of the venereal diseases control programme in New York City is considered to be due to the skilful combination by the official health agencies of the resources of private practitioners and hospital staffs, educational institutions, social and welfare services, voluntary health organizations, the clergy, and the Services. Further reductions in the incidence of venereal diseases will, however, be difficult to achieve in an area with such a shifting population as New York City.

Benjamin Schwartz


MISCELLANEOUS


The authors describe in detail a case of a 34-year-old woman with recurrent stomal and vulvo-vaginal ulcers, severe arthropathy, recurrent pyrexia, urticaria, frequency of micturation, and three attacks of iridocyclitis. The symptoms were of 7 years duration and have been suppressed by oral cortisone.

Hugh Ryan


This is a benign disease of presumed viral aetiology. The cat remains healthy. One of the atypical manifestations is unilateral conjunctivitis with pre-auricular lymphadenitis. The skin test is specific. C. McCulloch


