Abstracts

These selected abstracts and titles from the world literature are arranged in the following sections:

Syphilis and other treponematoses
(Clinical and therapy; serology and biological false-positive phenomenon; pathology and experimental)

Gonorrhea
(Clinical; microbiology; therapy)
Non-specific genital infection
Reiter’s disease

Syphilis and other treponematoses (clinical and therapy)

Syphilis and homosexuality in adolescents

Although venereologists are aware of the insidiousness of the onset of syphilis, other physicians nowadays see few cases of syphilis and often forget its manifestations. In the British Isles, paediatricians would still not be dealing with the cases mentioned in this study.

Case reports are given of a 17-year-old boy, misdiagnosed at first as having pityriasis rosea and later found to have secondary syphilis, and a 16-year-old boy found to have positive treponemal serological tests; both presented to paediatricians. They had contracted the disease through homosexual contact. Contact tracing was initiated after diagnosis.

M A Waugh

Pachymeningitis cervicalis hypertrophica syphilitica

Syphilis (serology and biological false-positive phenomenon)

Syphilis antibodies in the cerebrospinal fluid and their diagnostic significance

Samples of serum and cerebrospinal fluid (CSF) of 45 patients with confirmed syphilis were tested by the TPHA titre, specific IgG, and albumin to determine the ratio in the two specimens and evaluate the possibility of local production of specific antibodies in the central nervous system (CNS). In 10 of 11 patients with active neurosyphilis local production of antibodies in the CNS was demonstrated. In 16 patients with possible active neurosyphilis, seven specimens of CSF showed local antibody production and in none of 18 patients without evidence of neurosyphilis were local CNS antibodies found. It is concluded that the presence of immunoglobulins and positive TPHA test results at appropriate titres suggesting local production of CNS antibodies are a valuable diagnostic approach in the diagnosis of active neurosyphilis.

G W Csonka

Comparison of serum and plasma specimens for syphilis serology using the reagin screen test

The Wasserman, Kline and VDRL reactions in routine syphilis serodiagnosis

Syphilis (pathology and experimental)

Surface-associated host proteins on virulent Treponema pallidum

Characterization of lymphocyte responsiveness in early experimental syphilis. I In-vitro response to mitogens and Treponema pallidum antigens

Testicular cultivation of Treponema pallidum (Nichols strain) facilitated by sustained release steroid administration

Histopathology of secondary syphilis

Syphilitic lymphadenitis: immunofluorescent identification of spirochetes from imprints
Abstracts

Cell-mediated immunity in Treponema pallidum infected rabbits; in-vitro response of splenic and lymph node lymphocytes to mitogens and specific antigens
SM MARET, JB BASEMAN, AND JD FOLDS

Les complexes immuns circulants dans la syphilis primo-secondaire et sérologique

Some clinical features of syphilis suggest that immune complexes may be a pathogenetic factor in the syphilitic lesions. Recently, circulating immune complexes have been reported in six patients with secondary syphilis by Sølling et al.

In our study, the presence of circulating immune complexes was investigated in 42 patients with syphilis (primary, secondary, latent) by the method of Clq binding test. Elevated Clq binding activity was demonstrated in two-thirds of the patients with primary and secondary syphilis, with a significant difference between this group and the controls. Only two of the 21 patients with latent syphilis showed elevated Clq binding activity. Circulating immune complexes, often at moderate rates, appear very early and decrease rapidly during treatment.

It was not possible to demonstrate a decline in serum complement in association with elevated Clq binding activity.

During five Jarisch-Herxheimer reactions, there was no increase in circulating immune complexes compared with pretreatment values: this suggests that circulating immune complexes have no essential importance in this reaction.

The characterisation of the components of these circulating immune complexes by the previously described “radio-immunoprecipitation PEG assay” (RIPEG) will enable us to state their specificity and to conceive their potential responsibility in some lesions of secondary syphilis, such as nephritic syndrome.

Authors' summary

Rates of clearance of virulent Treponema pallidum (Nichols) from the blood stream of normal Mycobacterium bovis BCG-treated and syphilitic rabbits

This paper gives the results of experiments to determine whether BCG-treated rabbits cleared Treponema pallidum from their bloodstream more rapidly than rabbits in which immunity to T pallidum had been produced either actively or passively.

Five groups of rabbits were used: (A) six normal rabbits to provide a baseline clearance rate; (B) three rabbits inoculated with 1 mg Mycobacterium bovis (BCG) between four and six weeks earlier (these animals gave positive tuberculin test results); (C) three rabbits treated with immune serum prepared from other rabbits previously infected with T pallidum between six and 24 months earlier (the serum was given by daily intravenous injections of 10 ml commencing six days previously and with a final injection two hours before the challenge with T pallidum); (D) three rabbits treated with immune serum and BCG as in groups B and C; (E) three rabbits infected with T pallidum 13 months previously with present serology RPR + TPHA + 1/1520.

Intravenous injections of suspensions of freshly minced syphilitic orchiect testes containing a mean total of $1\times10^8$ T pallidum in an unspecified quantity of an anaerobic maintenance medium were given in an unspecified vein. Thereafter 0.5 ml amounts of blood were withdrawn from a marginal ear vein and 0-1 ml aliquots of whole blood injected intradermally in four sites on the shaved back of indicator rabbits. No anticoagulant was used and the injections were performed within two minutes. The indicator rabbits were kept shaved in a room temperature of 18°C. They were not immunosuppressed.

A clearance time was taken as the time when the circulating concentration of treponemes would establish lesions in only two of the four sites on indicator rabbits. These were: group A, 90 mins, group B, 90 mins, group C, 16 mins, group D, 54 mins, and group E, 20 mins. Complete clearance times were group A and B, > 8 hours, group C, 32-60 mins, group D, 1-2 hours, and group E, 2-4 hours. From these results it is inferred that the activation of the fixed macrophages in the reticuloendothelial system by BCG does not enhance the clearance of T pallidum, synergy with passive humoral immunity does not take place, and circulating humoral factors—probably antibodies to T pallidum—play a role in immunity to reinfecion in syphilis.

G D Morrison

Experimental syphilis and serological examination for treponematosis in hares

Concanavalin A-mediated affinity film for Treponema pallidum

Experimemtal syphilis in the rabbit: passive transfer of immunity with immunoglobulin G from immune serum

Genetic relationship between Treponema pallidum and Treponema pertenue, two non-cultivable human pathogens

Gonorrhoea (clinical)

Characteristics of defaulters in treatment for infection with Neisseria gonorrhoeae
GL GOODHART, M KRAMER, AND AA ZAIDI (Centre for Disease Control, Atlanta, USA). J Infect Dis 1979;140:649-51.

Orbital cellulitis due to Neisseria gonorrhoeae in an enucleated socket

Gonorrhoea (microbiology)

The in-vitro and in-vivo effects of a surgical lubricant on the recovery of gonococci from the endocervical canal

Disseminated gonococcal infection in mice
Lectins in diagnostic microbiology: use of wheat germ agglutinin for laboratory identification of *Neisseria gonorrhoeae*

RL Schaefer, KF Keller, and RJ Doyle


A lectin slide agglutination test has been developed for the confirmatory identification of *Neisseria gonorrhoeae*. With wheat germ lectin as an agglutinin, 164 of 165 clinical isolates of *N. gonorrhoeae* gave a 3 to 4+ reaction within six to eight minutes. Four gonococcal isolates, even though giving negative results by the fluorescent-antibody method, gave strong positive reactions with the wheat germ lectin. Among 23 isolates of *Neisseria meningitidis* tested, which included representatives of serogroups A, B, C, D, X, Y, and Z, only one strain in group X gave a false-positive reaction. The nonpathogenic species of *Neisseria*, as well as *Branhamella catarrhalis*, all showed negative reactions with the wheat germ agglutinin. The novel method provides a simple, rapid, and inexpensive means for the laboratory diagnosis of gonorrhoea and obviates the need for performing second-stage sugar fermentation studies or using the more expensive fluorescent-antibody techniques.

**Authors' summary**

The role of natural IgG and complement in the phagocytosis of type 4 *Neisseria gonorrhoeae* by human polymorphonuclear leukocytes.

NL Schiller, GL Friedman, and RB Roberts

(Cornell University Medical College, New York, USA).

The role of human serum components in the phagocytosis of logarithmic-phase type 4 *Neisseria gonorrhoeae* by human polymorphonuclear leukocytes was investigated. The requirement of fresh normal human serum (FHS) for optimal phagocytosis and the fixation of human immunoglobulin (IgG) and complement (C3) to the gonococcal cell surface suggested that both serum factors participate in the phagocytosis of these organisms. The percentage of neutrophils containing ingested organisms was directly proportional to the concentration of IgG purified from FHS. Absorption studies suggested that this natural IgG binds to a trypsin-sensitive surface protein on type 4 gonococci and crossreacts with stationary-phase type 2 N. gonorrhoeae, group C *Neisseria meningitidis*, and *Branhamella catarrhalis*, but not with logarithmic-phase type 2 gonococci or other *Neisseria* species. Although complement alone did not promote phagocytosis, it enhanced IgG-mediated ingestion. Studies using C2-deficient serum or serum chelators indicated that the alternative complement pathway participates in this interaction.

**Authors' summary**

The authors describe the use of the cephalosporin, cefotaxime, in a 22-year-old woman who had been infected by her boyfriend who had acquired the disease in the Far East. The infecting strain of the gonococcus was identified as a β-lactamase producer. Although the organism was sensitive in vitro to erythromycin, treatment with this drug, in an oral dose of 1 g daily for seven days, was ineffective. After treatment with a single intramuscular 2-g dose of cefotaxime, microbiological examination failed to demonstrate infection.

A McMillan

Pharmacological and in-vitro evaluation of cyclacillin: assessment as potential single-dose therapy for treatment of *Neisseria gonorrhoeae* infection

KF Wagner, AD Blair, GW Counts, and KK Holmes


Non-specific genital infection

Persistent urethral leucocytosis and asymptomatic chlamydial urethritis

SL Swartz and SJ Kraus

(Centre for Disease Control, Atlanta, USA). *J Infect Dis* 1979; 140: 614-7.

This paper follows up a previous report from these workers, concerning a definition of asymptomatic nongonococcal urethritis (NGU) based on the number of polymorphonuclear leucocytes (PMN) in the urethral specimen. Fifty-six sexually active men, without symptomatic urethritis or dysuria, were examined for PMN in a urethral smear. Those with >4 PMN/high-power field (hpf) were the controls. Patients were assessed at one week, and each group further sub-divided into those with >4 PMN/hpf and those with <4 PMN/hpf. Fifty-five per cent of the asymptomatic group converted to <4 PMN/hpf after one week. Of the 45% still with 4 PMN/hpf, six of the 13 patients yielded *Chlamydia trachomatis*. Within the asymptomatic and control groups, the isolation rates of *C trachomatis* were seven of 29 men and two of 27 men respectively; these figures approach significance. There was no correlation between the presence of *Ureaplasma urealyticum* and the asymptomatic or control groups.

It is concluded that persistence of >4 PMN/hpf in the urethral smear of men...
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with asymptomatic NGU may be a useful indicator of infection with Chlamydia trachomatis in clinics where isolation facilities for this organism are not readily available.

One criticism of the paper which could affect the results is that we are not told the time between last micturition and examination of urethral smears.

G L Ridgway

A method for the preparation of a chlamydia-group specific antigen on HeLa—229 cells infected with a strain of Chlamydia trachomatis for use in the complement fixation test
R COLIMON, F FERCHAL, AND Y PEROL

Chlorhexidine as an effective agent against Chlamydia trachomatis in vitro and in vivo
IT NISBET, DM GRAHAM, PE SPICER, AND GJ TIBBS

Isolation of Chlamydia trachomatis from the lower respiratory tract of adults
KJ TACK, PK PETERSON, FL RASP, M O'LEAN, D HANTO, RL SIMMONS, AND LD SABATH
(University of Minnesota, USA). Lancet 1980; i: 116-20.

Lower respiratory tract specimens from 46 adult patients with pulmonary infections were cultured for Chlamydia trachomatis. Isolation was achieved in six patients with conditions varying from acute bronchitis to severe diffuse interstitial pneumonia; these cases are discussed in detail. Four patients were immunosuppressed, three after renal transplantation, and one had acute lymphatic leukaemia. Cytomegalovirus was also isolated from those receiving renal allografts. Two immunosuppressed patients died; two improved rapidly with doxycycline, one with erythromycin, and the other slowly with penicillin.

This is the first report of isolation of C trachomatis from the lower respiratory tract of adults. The pathogenesis is discussed briefly with particular reference to morbidity and mortality in the immunosuppressed patient.

R S Pattman

Chlamydial endocarditis (editorial)
Lancet 1980; i: 132.

Significance of chlamydia genital infection in male infertility
V NIKKANEN, P TERHO, P PUNNONEN, AND O MEURMAN

Techniques for culturing and determining antimicrobial susceptibility of Chlamydia trachomatis
TR ROTA (Massachusetts General Hospital, Boston, USA). Arch Androl 1980; 4: 63-8.

The role of Chlamydia trachomatis in genital tract and associated diseases
D TAYLOR-ROBINSON AND BJ THOMAS

Infection of untreated primary human amnion monolayers with Chlamydia trachomatis
HR HARRISON AND RT RIGGIN

Experimental infection of the genital tract of female Greivit monkeys by Mycoplasma hominis: effects of different routes of infection
BR MØLLER AND EA FREUNDT

Enhancement of Ureaplasma urealyticum growth on a differential agar medium
A 7 B) by a polyclone, putrescine
MC SHEPARD AND RS COMBS

Reiter's Disease

Nail involvement in Reiter's syndrome
JWE DIGKSTRA

Trichomoniasis

Serodiagnosis of Trichomonas vaginalis infection by the indirect fluorescent antibody test
PR MASON

In this study the presence of antibodies to Trichomonas vaginalis in patients with asymptomatic trichomonal infections was investigated by using the indirect fluorescent antibody (IFA) test.

Cultures of T vaginalis from each of seven patients attending an antenatal clinic (SP-antigen) as well as a mixture of cultures from all seven patients (co-antigen) were used to prepare the antigen slides. Sera were obtained from 200 antenatal patients and 30 prepubescent girls. Standard IFA procedures were used.

Of the sera from the antenatal patients, 104 (52%) gave positive results with both antigens. Among the 52 patients with confirmed trichomoniasis in this group, 90% had antibodies at a concentration of 1/4, but among those in whom chlamydia was not detected only 17% had positive results at the same dilution whereas 64% had no demonstrable antibody. Only one of the sera from the children gave a positive reaction.

A comparison of tests using sp-antigen and those using co-antigen showed a good correlation. It appeared that IgG rather than IgM was the class of antibody concerned.

The results of the study indicated that the IFA test was reasonably reliable. Its value may lie in the diagnosis of male patients as well as of women with chronic low-grade infections, since in both these groups the demonstration of trichomonads is difficult.

C S Ratnasingham

Candidosis

Inhibition of candidal activity of human neutrophil leukocytes by aminoglycoside antibiotics
FA FERRARI, A PAGANI, M MARCONI, R STEFANONI AND AG SICCARDI

Adherence of Candida albicans and other Candida species to mucosal epithelial cells
RD KING, JC LEE, AND AL MORRIS
Genital herpes

Transient urogenic bladder in genital herpes

Acyclovir for suspected systemic herpes infections (letter)

Herpes simplex encephalitis in pregnancy

Storage and transport of cultures for herpes simplex virus type 2

Levamisole plus indomethacin in the treatment of herpes simplex

Different susceptibilities of skin to type 1 and type 2 herpes simplex viruses in newborn rabbits

Other sexually transmitted diseases

Aminopeptidase activity in Corynebacterium vaginale

Corynebacterium vaginale and vaginitis: a controlled trial of treatment
MJ BALSDON, GE TAYLOR, L PEAD, AND R MASKELL (St Mary’s Hospital, Portsmouth, UK). Lancet 1980;i: 501-3.

The clinical and microscopical diagnosis of Corynebacterium vaginale vaginitis was compared with laboratory culture, and double-blind treatment with metronidazole, oxytetracycline, and placebo assessed.

Vaginal discharge was examined for infection with C vaginale by Gram stain (Gram-variable coccobacilli and clue cells), wet film (clumps of coccobacilli and clue cells), vaginal pH, and the amine test (10% potassium hydroxide added to the wetmount preparation and examined for a “fishy” odour). Further vaginal samples were cultured on Columbia chocolate agar for C vaginale. Patients with concomitant infection were excluded from the study as well as those with an intrauterine contraceptive device, those who had taken recent antimicrobial medication, contacts of non-specific urethritis, and those with a mucopurulent cervical discharge.

Thirty such women with a malodorous vaginal discharge were selected by the described microscopical findings and treated by the randomised double-blind method with metronidazole (400 mg twice daily), oxytetracycline (500 mg twice daily), or two placebo tablets twice daily, all for one week. Microscopy and microbiological investigations were repeated after 10 days and four weeks, and cure was accepted in the absence of an abnormal vaginal discharge and normal microscopy. Treatment failures were given one week’s course of metronidazole (400 mg twice daily).

Laboratory culture confirmed the diagnosis in all but two cases initially and in 10 of 13 patients at follow-up. Corynebacterium vaginale was found nine times when it was not suspected clinically. Vaginal pH was above 5·2 in all cases where C vaginale was found and was between 4·2 and 4·9 in negative samples except on one occasion. The amine test gave a positive result only when C vaginale was isolated. Comparison with 30 consecutive unselected patients confirmed the correlation between the clinical and laboratory diagnosis.

Tetracycline was effective in only half the patients treated, although 74% of the strains were sensitive in vitro, but metronidazole cured all but one of 17 patients eventually treated, although only 68% of the strains were sensitive. One of the nine placebo-treated patients was cured spontaneously.

Although the numbers examined were small, the clinical and laboratory correlation was stressed and the efficacy of metronidazole discussed in spite of the comparative in-vitro insensitivity.

R S Pattman
Miscellaneous

Amoxycillin absorption and penetration in pelvic inflammatory disease
M Onsrud, H Gjonnaess, and T Bergan

The efficacy of amoxycillin in five cases of laparoscopically diagnosed pelvic inflammatory disease was monitored. Pelvic penetration was determined by measurement of both peritoneal fluid and plasma concentrations of amoxycillin. Thin polyethylene catheters were introduced through the abdominal wall into the recto-vaginal pouch. (Microbiological isolation on culture was not reported.)

The mean peak concentration of amoxycillin in peritoneal fluid was 6µg/ml and similar to that in blood plasma. The mean lag in peak penetration of peritoneal fluid behind plasma was two hours. The lag was most marked in two severe cases of pelvic inflammatory disease with frank purulent peritoneal exudate. Therapeutic concentrations remained detectable for seven to eight hours after a single dose of 0.5 g of amoxycillin.

Monitoring was discontinued and the patients given a course of 0.5 g amoxycillin for 10-18 days three times daily. Although the five patients had patent Fallopian tubes at the time of the study, subsequent fertility had still to be tested.

J M Harvey

Risk of pelvic inflammatory disease among intrauterine-device users irrespective of previous pregnancy

The use of intrauterine devices (IUD) in 690 patients admitted to hospital with pelvic inflammatory disease (PID or acute salpingitis) was compared with the use in a sexually active age-matched control group. Two hundred and twenty (31.9%) of the patients and 114 (16.5%) of the controls were using an IUD. Thus, the risk of PID was raised twofold by the use of an IUD. No significant difference was found between the women who had never been pregnant and those who had in the two groups. Neither was the risk of PID found to vary with age.

Authors’ summary

Management of necrotizing vasculitis with colchicine—improvement in patients with Behcet’s syndrome
PG Hazen and B Michel (University Hospital, Cleveland, USA). Arch Dermatol 1979; 115: 1303-6.

Acute-phase proteins, C9, factor B, and lysozyme in recurrent oral ulceration in Behcet’s syndrome

Prostatism. I The correlation between symptoms, cystometric and urodynamical findings

Peri-urethral bacterial flora in women

Vaginal parasitosis
MJ Garud, V Saralya, M Paraskar, and J Khokhawalla (Cama and Albless Hospital, Bombay, India). Acta Cytol 1980; 24: 34-5.

Tampon-associated vaginal ulceration