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)
Gonorrhoea
(Clinical; microbiology; therapy)
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Reiter's disease
Trichomoniasis
Candidosis
Genital herpes
Other sexually transmitted diseases
Public health and social aspects
Miscellaneous

Syphilis and other treponematoses (clinical and therapy)

Diagnosis of syphilis

General paralysis of the insane

A survey of 251 patients with acute syphilis treated in the collaborative penicillin survey of 1943-1950
RH KAMPMEIER, A SWEENEY, RW QUINN, ET AL (Center for Disease Control, Atlanta, GA, USA) Sex Transm Dis 1981;8:266-79.

The profile of neurosyphilis in Denmark.
A clinical and serological study of 800 patients in Denmark with neurosyphilis disclosed in the years 1971-1979 inclusive by Wassermann reaction (CWRM) in the cerebrospinal fluid
A PERDRUP, BB JØRGENSEN, AND NS PEDERSEN (Hvidovre Hospital, University of Copenhagen, Hvidovre, Denmark). Acta Derm Venereol 1981 suppl 96:3-14.

Using the Syphils Index at the State Serum Institute, Copenhagen, which contains national serological data from blood and cerebrospinal fluid (CSF) specimens since 1929, this series of 43 men and 12 women with neurosyphilis probably comprises all known cases encountered in Denmark during the nine-year period. Classified according to clinical features there were two cases of early syphilitic meningitis, 17 of asymptomatic neurosyphilis, 19 of meningovascular syphilis (six with inflammatory reactions of brain base, three of the convexity of the brain, and three of the spinal cord, and seven with syphilitic arteritis), one of gumma, and 16 of parenchymatous neurosyphilis (12 of general paralysis of the insane, three of tabes dorsalis, and one of optic atrophy). A wide range of alternative diagnoses had been made, which indicated a low index of suspicion among physicians.

All but 17 patients had a CSF white cell count exceeding 5 x 10⁶/l cells and only 17 had a CSF protein content less than 500 mg/l, both being normal in only nine. The TPI reaction was strongly reactive in the blood of all patients and reactive in the CSF of 54 patients.

The penicillin dosages (12-221 million units) were those currently given and the treatment was considered beneficial in most cases. Because of the increasing rarity of all types of tertiary syphilis there has been little doubt about the efficacy of current treatment of early syphilis. There was no evidence that any cases of neurosyphilis in this series arose from the failure of antibiotic treatment of early syphilis.

R R Willcox

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Cerebrospinal fluid penicillin levels during therapy for latent syphilis
J DUCAS AND HGH ROBSON (Department of Microbiology and Immunology, Montreal, Quebec, Canada). JAMA 1981;246:2583-4.

Thirty-three patients with latent syphilis (diagnosed by positive serological results to VDRL and FTA-ABS tests) were studied to determine the cerebrospinal fluid (CSF) absorption of penicillin G benzathine. They were given either 2-4 or 4-8 megaunits of penicillin G benzathine im weekly for three weeks with or without probenecid 500 mg orally four times daily, thus establishing
four groups. Serum concentrations of penicillin were monitored weekly, starting seven days after the first injection. The stated objective was to achieve penicillin concentrations in both the blood and CSF of at least 0.03 units/ml, previously defined as the concentration required to cure early syphilis.

The mean serum concentration one week after the third penicillin injection was 0.32 units/ml using 2-4 megaunits increasing to 0.41 units/ml with probenecid. With 4-8 megaunits the concentration rose to 0.75 units/ml. Only two of six patients given the 4-8 megaunit regimen with probenecid had CSF penicillin concentrations greater than 0.03 units/ml. Because of this the authors recommend the use of intravenous penicillin G sodium for neurosyphilis as first-line treatment rather than benzathine penicillin.

In an accompanying editorial, Rein points out the lack of information on the use of penicillin G benzathine in neurosyphilis with cure rates, in two small series, ranging from 67-81%. Most available information is purely anecdotal. The results in the above paper are limited only to patients with latent syphilis were studied. In cases with meningeal inflammation higher CSF concentrations of penicillin would be expected, but even in active neurosyphilis CSF concentrations lower than 0.03 mg/ml have been reported with penicillin G benzathine. Probenecid increases the CSF concentration in several ways but may actually interfere with the accumulation of penicillin in brain tissue; therefore raising the dose of penicillin may be more reliable. In view of these doubts high-dose intravenous crystalline penicillin G is recommended for neurosyphilis on theoretical grounds.

R S Putman

Hydrophobic interaction chromatography used for purification of a Treponema Reiter ribonucleic acid antigen precipitating with antibodies in human syphilitic sera

CS Petersen, NS Petersen, and NH Axelsten (Statens Serum Institut, Copenhagen, Denmark). Anal Biochem 1981; 117: 231-49.

Syphilis (pathology and experimental)

Avoidance of host defences by Treponema pallidum in situ and on extraction from infected rabbit testes

CW Penn (Department of Microbiology, University of Birmingham, UK). J Gen Microbiol 1981; 126: 69-75.

Ultrastructural studies on rabbit testes acutely infected with Treponema pallidum clearly showed that most treponemes were extracellular; although the treponemes were readily accessible to the host defence mechanisms, acute inflammatory cells were rarely seen. Two lines of investigation have been used in this study to throw light on the problem of how treponemes avoid host defences in the early stages of infection.

Investigations using leucocyte migration into subcutaneous chambers were undertaken to determine whether the treponemes actively suppress or fail to incite the cellular inflammatory response. Perforated plastic chambers were implanted subcutaneously in rabbits and guinea pigs. Six to 10 weeks later the chamber fluid was inoculated with either freshly harvested live T pallidum or heat-killed gonococci. Leucocyte counts were made on the chamber fluids over a 48-hour period, and these showed that in the T pallidum-infected chambers the counts did not rise appreciably whereas after inoculation with gonococci counts increased up to 50 times the normal value. When T pallidum and gonococci were inoculated simultaneously a cellular response similar to that seen with the gonococci alone occurred. These results suggested that inflammation was not actively suppressed but failed to be incited by the treponemes.

The ability of treponemes to react with antibody, a necessary prerequisite for complement fixing and subsequent generation of leucocyte chemotactic factors, was also investigated. Interaction of freshly harvested treponemes with antibody from infected rabbits could not be detected by an indirect fluorescent antibody method. Lack of antibody binding to unfixed treponemes may be due to a non-antigenic barrier surrounding the treponemes, the nature of which requires further investigation.

These results taken together suggest a mechanism for the pathogenesis of early syphilis infection which revolves around the fact that the surface structure of T pallidum masks the organism from the host defence mechanisms.

S I Egglston

Transfer of resistance with syphilitic immune cells: Lack of correlation with mitogenic activity


Hamsters infected intradermally with Treponema pallidum Bosnia A developed extensive chronic skin lesions, usually accompanied by metastatic lesions on the paws, lips, and anal region and by lymph nodes teeming with treponemes. Throughout the course of syphilitic infection cells from the inguinal lymph nodes responded poorly to stimulation with suboptimal, or supraoptimal concentrations of concanavalin A, phytohaemagglutinin M, or lipopolysaccharide. The response of syphilitic spleen cell was variable. Depression of lymphocyte reactivity to mitogens preceded clinical signs of infection and correlated well with the chronicity of syphilitic infection. When syphilitic hamsters were treated with a curative dose of penicillin, their mitogenic responses returned to normal or were slightly raised. No correlation existed between mitogen activity and the ability of lymphoid cells to induce an effective immune response when transferred to normal recipients. No significant differences in protection were detected among recipients of immune cells with or without activity to mitogens. These results show that lymphocyte transformation by mitogens in vitro is not a measure of effective treponemical activity and so may not be a valid indicator of the protective immune status of syphilitic animals

Authors' summary

Accelerated lesion development in experimental syphilis

TJ Fitzgerald (University of Minnesota School of Medicine, Duluth, MN, USA). Infect Immun 1981; 34: 478-82.
Gonorrhoea (microbiology)

The pathogenesis of gonorrhoea

Host species-specific damage to oviduct mucosa by Neisseria gonorrhoeae lipopolysaccharide

Monoclonal antibody analysis of lipopolysaccharide from Neisseria gonorrhoeae and Neisseria meningitidis

Serology of Neisseria gonorrhoeae: W-antigen sero-grouping by coagglutination and protein 1 serotyping by enzyme-linked immunosorbent assay both detect protein 1 antigens

The effect of antibody directed against outer-membrane antigens on the virulence of a pilated variant of Neisseria gonorrhoeae

Protein 1 of Neisseria gonorrhoeae outer membrane is a porin

Comparative in-vitro activity of cefoxime, ceftoperazone, cefuroxime, cefoxitin and penicillin against Neisseria gonorrhoeae

Gonorrhoea (clinical)

Pharyngeal gonorrhoea

Patterns of gonococcal arthritis
JL GOLDMAN (Emory University School of Medicine, Atlanta, GA, USA). J Rheumatol 1981; 8: 707-9.

Gonorrhoea (therapy)

Dose-ranging study of ceftriaxone for uncomplicated gonorrhoea in men

Treatment of uncomplicated gonorrhoea with roxocain

Comparative efficacy of piperacillin and penicillin G in treatment of gonococcal urethritis

Non-specific genital infection

Role of chlamydiae in genitourinary disease

Chlamydia trachomatis and herpes simplex virus IgA in cervical secretions of patients with cervical atypia

Progestrone as a key factor in the development of a mouse model for genital tract infection with Chlamydia trachomatis

Reiter's disease

Reiter's disease

Trichomoniasis

Evaluation of acridine orange stain for detection of Trichomonas vaginalis in vaginal specimens

Trichomonas vaginalis infection of the median raphe of the penis
Candidosis

Adherence of Candida albicans to human buccal epithelial cells after growth on different carbon sources

Purification and characterization of a major cytoplasmic antigen of Candida albicans

Immunological relatedness among Candida albicans and other pathogenic Candida species
RF HECTOR, FE LYON, AND JE DOMER (Tulane University School of Medicine, New Orleans, USA). Infect Immun 1981;34:844-50.

The ultrastructure of Candida albicans infections

Genital herpes

Management of genital herpes simplex virus infection occurring during pregnancy

In a 57-month prospective study at Vanderbilt University Hospital and its affiliate, Nashville General Hospital, all suspected genital herpes lesions during pregnancy were cultured for herpes simplex virus. Those patients with positive HSV culture results before labour and without a subsequent negative culture underwent caesarean section. Those patients whose culture results became negative were considered candidates for vaginal delivery. During the study period there were 16,381 deliveries at the two institutions. Cultures were performed on 120 pregnant women; 80 were negative for HSV and 40 positive. The outcome of these pregnancies as well as a review of the experience with neonatal HSV infection in Middle Tennessee is presented. By using HSV cultures of genital lesions as a guide to determining the route of delivery, the incidence of caesarean sections and neonatal HSV infection can be kept to a minimum.

Authors' summary

Other sexually transmitted diseases

Presumed sexual transmission of meningococci

Of three patients in whom meningococci mimicked the signs and symptoms of gonococci, one (case 1, male) had a seven-day history of urethral discharge and dysuria, one (case 2, the female extramarital consort of case 1) had no apparent abnormality in genital tract smears and cultures but harboured meningococci in her pharynx, and one (case 3, wife of case 1) had meningococci in her cervical smear and culture. In cases 1 and 3, the patients were cured satisfactorily by a single injection of 2-4 megaunits of procaine penicillin, but in case 2 the patient was not treated. All three isolates had identical biochemical reactions for meningococci and identical penicillin sensitivities. They were not groupable.

G D Morrison

Management of condylomata acuminata with the carbon dioxide laser
JW CALKINS, BJ MASTERSON, JF MAGRINA, AND CV CAPEN (Department of Obstetrics and Gynaecology, University of Kansas Medical Center, Kansas City, USA). Obstet Gynecol 1982;59:105-8.

Ninety-four patients with condylomata acuminata of the lower genital tract and perianal region were treated with the carbon dioxide laser. Most were managed in the outpatient clinic, but 1-4 treatments were required depending on the extent of the lesions. Of 90 patients, 75 (83.3%) were free of lesions on all follow-up examinations after initial treatment. Of 15 patients with recurrent lesions, 13 underwent second laser treatment; seven of these cases have been subsequently free of condylomata. The overall success rate was 91%. The carbon dioxide laser provides an acceptable method of treating condylomata acuminata because of its precision, rapid healing, and, without scarring, and safety when used during pregnancy.

Authors' summary

Carbon dioxide laser surgery in treatment of condyloma

Public health and social aspects

Attitude of male homosexuals to venereal disease clinics

Sexually transmitted diseases among prostitutes and other sexual offenders

Miscellaneous

A controlled survey of sarcoidosis in Behçet's disease
H YAZICI, M TUZLACI, AND S YURKAKUL (Istanbul University, Department of Medicine, Istanbul, Turkey). Ann Rheum Dis 1981;40:558-60.