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)
Non-Specific Genital Infection
Reiter's Disease

Syphilis and Other Treponematoses

Hearing Loss of Acquired Syphilis. Diagnosis confirmed by Incudectomy

NADOL, J. B. (1975) Laryngoscope, 85, 1888

The author reports the case history of a 34-year-old woman who was seen at the Massachusetts Eye and Ear Infirmary in January, 1973, with a 2-year history of intermittent vertigo and a 5-month history of left-sided deafness. An audiogram showed no cochlear function on the left and a mild sensorineural hearing loss on the right.

She had been treated on thirteen occasions between 1958 and 1973 with intramuscular penicillin or oral tetracycline for syphilis and gonorrhoea; the duration and dose of antibiotics are not recorded although they are said to have been adequate. She had secondary syphilis diagnosed twice in 1964.

In June, 1973, a specimen of cerebrospinal fluid (CSF) had raised cells and protein and a Lange curve which was tabetic in form, although the Hinton test was non-reactive. Her blood Hinton test was positive at 1 in 16. Penicillin caused a fixed drug eruption and was discontinued after one dose, and she was treated with tetracycline 2 g. daily for 20 days. No improvement occurred, and by October her condition was found to have deteriorated. A further specimen of CSF showed no lymphocytes and a normal protein level.

A typanotomy was performed and the incus removed. Histology showed a chronic osteitis with reactive bone formation consistent with syphilis. She continued on tetracycline 2 g. daily with prednisolone 60 mg. on alternate days. After 13 weeks the tetracycline was stopped and the prednisolone gradually discontinued.

The author discusses the pathology of syphilis in the ear, and notes that treatment with antibiotics and steroids should be continued for 3 months.

G. D. Morrison

Syphilis
(Serology and biological false positive phenomenon)

VDRL Test in a Blood Transfusion Service


VDRL screening tests were performed on 73,350 donations of blood collected in South Australia during 1974. 318 sera (0.43 per cent.) gave reactive results and were sent to a reference centre for verification tests. These provided confirmatory evidence of syphilis in 34 sera from 24 donors; eleven of these were known to have had syphilis in the past and thirteen had either untreated infections or treated disease unknown to the transfusion service. 284 sera from 235 donors gave false positive (BFP) reactions in the screening test; 115 were from males and 120 from females, although the panel contained about three times as many male as female donors. The average age of the BFP reactors was somewhat greater than that of donors in general. The BFP reactions showed a marked seasonal incidence; 65 per cent. occurred during the period May to August, the late autumn and winter in the southern hemisphere. The results are not thought to suggest that regular donation contributes to the production of BFP reactions.

A. E. Wilkinson

[Reprinted from Abstracts on Hygiene, by permission of the Editor.]

Spontaneous Reversion of FTA-ABS Test Reactions


VDRL and FTA-ABS tests were carried out as part of the examination of applicants for employment. If either was found reactive, both tests were repeated a week later. In 157 patients the VDRL test was found to be reactive but the FTA-ABS test negative; 56 of these patients were observed for periods up to 21 months, and in twenty the FTA-ABS test became negative after periods of a week to 7 months. All but two of these patients were under 30 years of age and fourteen were females. Most of the initially reactive FTA-ABS tests showed only weak fluorescence.

These patients were all apparently healthy and had no previous history of venereal disease. It is suggested that, when only the FTA-ABS test is found reactive in such patients, tests should be repeated for up to a year before a diagnosis of syphilis is made. The laboratory should also report the intensity of fluorescence observed.

[TP1 and TPHA tests would have been of value in the assessment of the specificity of these isolated reactive FTA-ABS results.]

A. E. Wilkinson

[Reprinted from Abstracts on Hygiene, by permission of the Editor.]
Syphilis (Pathology and experimental)

Effect of Macrophage Activation on Infection with Treponema pallidum
SCHILL, R., MUSHER, D., JACOBSON, K., SCHWETHEL, P., and SIMMONS, C. (1975) Infect. and Immu., 12, 505

Gonorrhoea (Clinical)
Faucial Gonorrhoea

900 consecutive patients (650 males and 250 females) attending the Perth Clinic for the Treatment of Venerable Diseases were investigated. During the examination of the patient the tonsils, soft palate, and pharynx were swabbed with a plain sterile swab, which was plated directly on to Thayer-Martin medium for incubation. N. gonorrhoeae culture was confirmed by sugar fermentation, using a disc technique. Urogenital gonorrhoea was found in ninety of the 650 males (13.5 per cent.), and six of these were found to have faucial gonorrhoea (0.92 per cent. of the male patients). 32 females had urogenital gonorrhoea (12.8 per cent.), but none of the female patients. The authors do not state if any cases of gonorrhoea would have been missed had faecal specimens not been taken. Eleven of the male patients were known to be homosexual three of these had urogenital gonorrhoea, of whom one also had a faucial infection.

Some of the patients were asked whether they had practised oral coitus; when they had, there was a higher incidence of faucial gonorrhoea. None of the patients with proven faucial infection had symptoms.

D. H. Jackson

Gonorrhoea (Microbiology)
Circulating Immune Complexes in a Patient with Prolonged Gonococcal Septicaemia

A 38-year-old man developed aching of the hands, knees, and ankles with fever which lasted intermittently for 2 weeks; there had also been two other episodes of fever in the preceding 9 months. There were no signs of arthritis and no genito-urinary symptoms. Gonococci were twice isolated from the blood but not from the urethra or rectum. Scattered skin lesions developed; numerous gonococci were found in aspirates from these by immunofluorescence staining but cultures were negative. There was a prompt response to treatment with penicillin.

In the early phase of disseminated gonococcal infection antibody is often not demonstrable or present only at a low titre although the infection may have been present for a long time. This may be due to the formation of immune complexes. Complement-fixation tests with both a polyvalent antigen and the infecting strain were negative while the patient was in hospital; later they became reactive at a low titre. The initial GCFT-negative serum was fractionated by density gradient ultracentrifugation. When this was done at pH 7.2, both IgG and IgM fractions were negative; at pH 4.0 (under which conditions immune complexes would dissociate) the IgG fraction was reactive at a dilution of 1 in 8.

The patient's ability to form antibody may also have been decreased. His serum levels of IgG and IgM were low (52 and 0.4 mg/ml) and his Widal test remained negative after a booster dose of TAB vaccine. A splenectomy for essential thrombocytopenia performed 10 years previously may have been a contributory factor.

A. E. Wilkinson


Bacterial Hemagglutination by Neisseria gonorrhoeae KORANSKY, J. R., SCALES, R. W., and KRAUS, S. J. (1975) Infect. and Immun., 12, 495


Gonorrhoea (Therapy)

Non-specific Genital Infection

An indirect immunoferritin (IIF) technique is described for recognizing the elementary bodies (EB) of Chlamydia trachomatis in unsectioned preparations. Both the EB of a genital strain of C. trachomatis grown in irradiated McCoy cells and EB in clinical specimens obtained from patients attending a venereal disease clinic were identified by the IIF test in the electron microscope. Cell culture-grown EB were detected by ferritin staining for up to 4 weeks after the organisms had lost their infectivity for tissue cultures. The IIF test was of comparable sensitivity to isolation methods in detecting Chlamydia in clinical specimens. Other possible applications of the IIF technique are discussed.

Authors' summary


The technique of isolating Chlamydia trachomatis from the human genital tract by centrifuging clinical specimens on to cell monolayers with subsequent incubation has been improved and simplified. Gentamicin in the media was found to be superior to streptomycin in reducing bacterial contamination of specimens. The
infectivity of chlamydial suspensions of laboratory cultured material was significantly reduced by storage at \(-4\)°C for more than 48 hrs, and by immediate freezing to \(-70\)°C. When compared with immediate processing of the specimens, freezing to \(-70\)°C was found to reduce the isolation rate of *C. trachomatis* from men with non-gonococcal urethritis (NGU) by approximately 20 per cent.

McCoy cells pretreated with idoxuridine were compared with irradiated McCoy cells for the isolation of *C. trachomatis* from clinical specimens. There was no significant difference in sensitivity between the two systems, but the former is considerably simpler. The effect of the centrifugal force used for inoculating specimens on to the cell monolayers on the isolation rate of *C. trachomatis* was studied in groups of men with NGU. Maximal isolation rates were obtained with forces of about 3000 G, which were not significantly raised by further increasing the force used.

It is suggested that the isolation of *C. trachomatis* from the genital tract is now well within the capacity of any laboratory equipped with simple cell culture facilities.

**Authors’ summary**

**Chlamydial Pharyngitis?**


A 46-year-old white woman attended the Screening and Acute Care Clinic, University of California, San Francisco, with a 4-month history of pharyngeal discomfort; on examination she was found to have a mild pharyngitis and, on pelvic examination, a mild cervicitis. *Chlamydia trachomatis* was recovered on cell culture from both the pharynx and cervix.

She admitted regular oro-genital contact with a male partner who was being treated at another clinic for recurrent NGU (apparently *Chlamydia* isolations were not attempted in his case). The authors suggest that the pharyngeal infection may have resulted from direct inoculation.

**Reiter’s Disease**

Reiter’s Disease in Three Boys


Trichomoniasis

Trichomonas Vaginitis and *Escherichia coli* Urinary Infection in a Newborn Infant


Candidosis

Germ Tube and Chlamydospore Formation by *Candida albicans* on a New Medium


Genital Herpes

Failure of Neutral-Red Photoinactivation in Recurrent HSV Infections


Because photodynamic inactivation of herpes simplex virus infections may not be free of hazard, the efficacy of photodynamic inactivation with neutral red and light was evaluated in a placebo-controlled study of 170 episodes of recurrent herpes simplex virus infection in 96 patients. The preparation of neutral red that was used was shown to photoinactivate herpes simplex virus *in vitro*, but had no significant effect on the rate of resolution of herpetic lesions (P > 0.10) or on the frequency of subsequent recurrences (P > 0.10) except for orolabial lesions, in which an adverse effect on the rate of subsequent recurrences was observed (P < 0.05). In the absence of demonstrated efficacy, the routine use of neutral red and light in patients with recurrent herpes simplex virus infections should be discontinued. Furthermore, other photoactive dyes should not be used until their efficacy has been demonstrated by suitably controlled clinical trials.

**Epidemiology and Interrelationship of Cervical Dysplasia and Type 2 Herpes Virus in a Low-income Housing Project**


368 women living in a low-income housing estate in Atlanta, Georgia, were studied regarding the association between herpes simplex type 2 (HSV-2) antibodies and cervical dysplasia as well as their relationship to age, age at first pregnancy (AFP), and total number of pregnancies (TPN). For each woman a Papa-nicolau smear was done and blood was tested for HSV-2 antibodies by the inhibition passive haemagglutination (INPHA) method.

A significant rise in HSV-2 antibodies was noted with increasing age. Such antibodies were not found in nulliparous women under 19 years of age.
age and were not related to AFP or TNP. Although cervical dysplasia appeared to be associated with age, AFP, and TNP, this was not significant. Women with HSV-2 antibodies were almost twice as likely to have cervical dysplasia as were women without them, but this result was due to the group of 15 to 24-year-old women, in whom those with such antibodies had a relative risk of 5.44 of having dysplasia compared with those without them. The authors discuss possible reasons for this and for the absence of antibodies in young nulliparous women.

The study confirms the view that an association exists between herpes virus infection and cervical dysplasia, but further work is necessary to establish whether such infection precedes or follows dysplasia.

C. S. Ratnatunga

Misery of Recurrent Herpes: What to do? (1975)
New Engl. J. Med., 293, 986
(Leader)

Differentiation of Herpes Simplex Virus Serotypes 1 and 2 by DNA-DNA-Hybridization SCHULTE-HOLTHAUSEN, H., and SCHNEWIS, K. E. (1975) Medical Microbiology and Immunology, 161, 279

Restricted Transcription of the Herpes Simplex Virus Genome Occurring Early after Infection and in the Presence of Metabolic Inhibitors SWANSTROM, R. I., PIVO, K. and WAGNER, E. K. (1975) Virology, 66, 140


Vaccination against Herpes Simplex Virus PLOTKIN, S. A. (1975) Pediatrics, 56, 494

Vaccination against Herpesviruses BRUNELL, P. (1975) Pediatrics, 56, 496

Public Health and Social Aspects

Sexual Activity and Contraception Use in Young Adults PAGE, R., WERRY, J. S., and HUNTON, R. (1975) N. Z. med. J., 82, 261


Miscellaneous


Cytomegalovirus (CMV) has been found in respiratory droplets, saliva, urine, cervical secretions, and semen. Complement-fixing CMV antibody shows a marked increase in incidence in both sexes of the general population during early adulthood. To investigate the role of sexual contact in the transmission of CMV, sera of four groups of women living in Kansas City, Missouri, were tested for antibodies to AD-169 strain of CMV.

Group I comprised 172 nuns working as nurses or teachers. Group II comprised 191 upper socioeconomic class, mostly white hospital patients. Group III comprised 318 lower socioeconomic, mostly black hospital patients. Group IV comprised 68 women attending a V.D. clinic.

Results arranged in 10-year age groups showed Groups II, III, and IV to have a moderate prevalence of antibody in the 'teens with a rapid increase in early adulthood. Group I showed a slow rise throughout adulthood with lower prevalence at all ages under 60.

As Groups II and III have similar rates, socioeconomic and racial factors are not important. Group I differs from the others as regards intimate salivary and venereal contact which may account for its lower antibody rate.

Further developments in antigenic typing of oral and cervical CMV and preparation of strain specific sera would increase understanding of the epidemiology of these infections.

N. A. Durham


The authors investigated the semen from 249 individuals for the presence of CMV. Only ten patients being treated for sexually-transmitted infections were studied, one of whom was found to have CMV in the semen. Two of 185 men seeking a fertility evaluation and three of 54 young adults harboured the virus. The authors speculate that CMV may be sexually-transmitted in some instances.

[Insufficient patients with sexually-transmitted infections were investigated in this study. The role of sexual transmission in the spread of CMV is still unknown.]

J. R. W. Harris


The authors studied twenty patients admitted to Harbor General Hospital, California, in whom the diagnosis of acute pelvic inflammatory disease (PID) had been made by three of the following criteria:

1. Fever greater than 100.4°F (19 patients);
2. Purulent vaginal discharge (16 patients);
3. Pelvic tenderness (20 patients);
4. Signs of peritoneal irritation or ileus (19 patients);
5. Pelvic mass (1 patient).

Cervical and blood cultures were taken and then culdocentesis was performed after vaginal disinfection. The aspirate was cultured aerobically, anaerobically, and in candle-extinction jars; in those patients from whom no aspirate could be obtained the cul-de-sac was irrigated with 2 to 5 ml sterile saline and the saline...
cultured. Eight patients with no signs of pelvic disease who were undergoing elective surgery served as controls and also had culdocentesis performed. All eight of these cul-de-sac cultures were negative.

The results in patients with PID showed that eighteen patients had positive cul-de-sac cultures, but in only one instance was *N. gonorrhoeae* isolated. A total of 48 different types of micro-organisms were isolated, 32 being aerobic and sixteen anaerobic Cervical cultures yielded 77 different micro-organisms, 57 aerobic and twenty anaerobic. *N. gonorrhoeae* was isolated in thirteen patients, only one of whom had this organism present in the cul-de-sac. All blood cultures were negative.

The authors suggest that the role of *N. gonorrhoeae* in acute PID may be to allow the normal vaginal flora to gain access to the upper genital tract, and they cite other series of cul-de-sac cultures which confirm this. They imply that eradication of *N. gonorrhoeae* from the cervix does not necessarily mean that the organisms causing PID are being adequately treated.

G. D. Morrison

Polymicrobial Etiology of Acute Pelvic Inflammatory Disease


A group of 204 women with acute pelvic inflammatory disease (PID) was studied in an attempt to establish the causes. The criteria for the diagnosis of PID are defined. Endocervical specimens from all patients were cultured for *N. gonorrhoeae* and genital mycoplasmas, and from half of them for *Chlamydia trachomatis*, *Herpesvirus hominis*, and cytomegalovirus. Specimens of peritoneal fluid from seventeen control women, were examined by Gram-staining and cultured aerobically and anaerobically in various media. A battery of serological tests for antibodies to *N. gonorrhoeae*, *M. hominis*, T-lymphoplasm, cytomegalovirus, *H. hominis*, and *C. trachomatis* were performed on acute phase and, in many cases, convalescent sera from most patients in the study.

*N. gonorrhoeae* was recovered from the endocervix in ninety (44 per cent.) of the 204 women with PID, and this organism was found in peritoneal exudate from eight of 21 patients with, and none of 33 without, cervical gonococcal infection. Significant levels of gonococcal pil antibody were detected in initial or convalescent sera from 32 (84 per cent.) of 38 women with PID who had positive endocervical cultures, and from nine (36 per cent.) of 25 women with negative cultures for *N. gonorrhoeae*.

Among women with acute non-gonococcal PID, polymicrobial pelvic infection, usually with mixed anaerobic and aerobic bacteria, was found. The most common species recovered from peritoneal fluid were *Bacteroides fragilis*, peptostreptococci, and peptococci. The role of *M. hominis* was found to be equivocal. Although the organism was isolated from the endocervix in 91 per cent. of patients with gonococcal PID and 64 per cent. of those with non-gonococcal PID, similar isolated rates were found respectively in women with uncomplicated gonorrhoea and in women without gonorrhoea or PID. Recovery of T-lymphoplasm was very common in women with and without PID. *M. hominis* was isolated from two, and T-lymphoplasm from one of 54 peritoneal exudates from women with PID. A 4-fold or greater rise in mycoplasmacidal antibody to *M. hominis* or T-lymphoplasm was more commonly seen in patients with PID than in those without PID.

*Chlamydia trachomatis* was recovered from the endocervix in 20 per cent. of women with gonococcal PID and 20 per cent of women with non-gonococcal PID; one patient yielded *C. trachomatis* from peritoneal exudate. A 4-fold or greater rise in microimmunofluorescent antibody titre to antigens of *C. trachomatis* was found in 17 per cent. of women with gonococcal PID and in 24 per cent. of those with non-gonococcal PID, but five (11 per cent) of 47 women without PID exhibited a similar rise in titre.

The authors are satisfied that tuboperitoneal infection by *N. gonorrhoeae* probably causes PID in most patients with this disease in whom the organism is present in the cervix. On the other hand, they believe that a wide variety of microorganisms may cause non-gonococcal PID; the possibility that *M. hominis*, *C. trachomatis*, and cytomegalovirus may be numbered among these is not excluded.

J. D. Oriel

Non-Venereal Sclerosing Lymphangitis of the Penis

FIUMARA, N. J. (1975) Arch. Derm., 111, 902

The author describes sclerosing lymphangitis as it occurred in three patients who attended a Sexually-Transmitted Diseases Clinic in 1973. He thinks that, although only some dozen cases have been described in the literature, the condition is probably relatively common, and that as it may resolve in 24 hours the patient may not trouble to see a doctor.

In each of three cases reported there had been multiple exposures, including oro-genital contact, in 24 hours preceding the development of lymphangitis. The presence of syphilis and gonorrhoea was excluded by appropriate investigations. The clinical condition is described as generally painless, and as "a mild angioedema of the prepuc with a non-tender, cord-like lesion in and around the coronal sulcus that sometimes encircles the entire penis." By the end of 2 weeks the condition had resolved in two of the three cases, and by the end of 24 days the genitalia of the third patient appeared normal.

The benign nature of the lesion and the apparent certainty of its spontaneous resolution justifies the absence of a biopsy in the cases reported.

[The reviewer has himself seen five cases in a 3-month period during 1975.]

A. McMillan
Long-term Therapy of Chronic Bacterial Prostatitis with Trimethoprim-sulfamethoxazole

In a trial to determine the usefulness of long-term antimicrobial therapy, nineteen patients, aged between 40 and 65 years, with proven chronic Gram-negative bacterial prostatitis were each treated with two tablets of trimethoprim-sulphamethoxazole (TMP-SMX) twice daily for 12 weeks. Bacteriological studies were performed every 4 weeks throughout treatment and for at least 3 months after its completion. As each of four patients had two separate pathogens isolated, a total of 23 Gram-negative organisms was studied. Only one patient failed to complete the treatment schedule; he had a persistent infection with Enterobacter aerogenes, producing incapacitating symptoms and necessitating alternative treatment.

The patient cure rate, as judged 3 months after treatment by sterile urine and prostatic secretions and lack of symptoms, was six out of nineteen. In three further patients, harbouring two different infecting organisms, treatment eliminated one of the two. Eight patients were improved, being asymptomatic with sterile urine and prostatic secretions during treatment but becoming re-infected with the same serogroup organism 2 to 4 weeks after therapy. In five of the nineteen patients (26 per cent.) therapy was ineffective. There were no adverse side-effects to the drug during the period of the study.

With the exception of Pseudomonas aeruginosa, the infecting organisms were sensitive to TMP-SMX, and no change in sensitivity was noted in those cases which failed to respond or relapsed. Reasons for failure of therapy are discussed. The author concludes that TMP-SMX is the most effective agent presently available against chronic bacterial prostatitis, and advocates a 12-week course of treatment as it apparently doubles the cure rate of a 2-week regime.

[The numbers in the trial are small, and a larger number of patients, with longer follow-up, would probably have been desirable.] A. McMillan


Metronidazole was tested for carcinogenicity in a lifetime study in Swiss mice. The drug was incorporated in the diet at 0·5, 0·3, 0·15 and 0·06 per cent. levels and was given for the whole life span. A control group received metronidazole-free diet. The animals tolerated the drug well at all dose levels. Lung tumours developed in 18·5 to 20 per cent. of controls and 33·3 to 77·1 per cent. of metronidazole-treated mice; the higher incidence was associated with higher dosage. There was also a sex difference; male mice in the highest dose group had the greatest incidence of lung tumours (77·1 per cent.) whereas 44 per cent. of female mice in the same dosage group had tumours. The corresponding figures in the control group were 18·5 and 20 per cent. Malignant lymphoma was significantly more common in female mice in the two highest dose groups compared with controls; there was little difference in the male mice in any of the groups. The average latent periods in treated and control mice are considered inconsequential and probably not related to the lung tumour response.

[This and the next paper have attracted considerable attention in the USA. It should be pointed out that, in further studies on mice, rats and hamsters, metronidazole did not increase the incidence of malignant neoplasms.] G. W. Csonka


The mutation rate of Klebsiella pneumoniae, E. coli K 12, and Citrobacter freundii 425 was determined after addition of the nitroimidazoles to the nutrient broth. The increase in mutation rate induced by these substances was calculated by dividing these mutation rates by the average levels of spontaneous mutation. Ronidazole (an antibiotic used in poultry and as a growth-promoting agent in pig breeding) showed the highest mutagenic activity by a factor of 26·5.

Metronidazole, nimorazole, and dimetridazole (used in poultry) increased mutation by a factor of 3 to 7.

It is concluded that metronidazole and related agents should be used with caution, at least for the time necessary for a prospective study of patients who have received these substances.

[Many common substances including antibacterial agents have mutagenic effects on certain bacteria and the relevance of these observations to genetic hazards in mammals has yet to be established.]

G. W. Csonka


Semen Cultures in Diagnosis of Bacterial Prostatitis MOBLEY, D. F. (1975) J. Urol. (Baltimore), 114, 83


Correction

In the paper by R. H. Jones, M. A. Finn, J. J. Thomas, and E. C. Folger, which appeared in the February issue of the journal (British Journal of Venereal Diseases (1976), 52, 18) the second paragraph, right hand column, p. 19, should read as follows:

The BSA-sodium stearate complex was made by dissolving 5 mg stearic acid in 25 ml 0.1 N NaOH at 75°C. This solution was cooled to below 50°C (during which small additions of 0.1 N HCl or 0.1 N NaOH may be needed to maintain solubility) and then added to 20 ml of a 10 per cent. BSA solution and 20 ml GKNP; the total volume was added to the final medium. This BSA-sodium stearate complex must be prepared and used the same day.