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**

**Trichomoniasis**

**Candidosis**

**Genital herpes**

**Other sexually-transmitted diseases**

**Public health and social aspects**

**Miscellaneous**

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**Syphilis and other treponematoses (Clinical and therapy)**

Treponemal depigmentation, with special reference to yaws


The author observed 686 cases of depigmentation in a population of 45 035 while conducting surveys of trypanosomiasis, leprosy, and other endemic diseases in the area formerly known as the Belgian Congo. The depigmentation was attributable to yaws, as venereal syphilis was not a major problem in this area.

The prevalence varied from 1·1 per thousand in males under 30 and 1·3 per thousand in females under 30, to 44·2 per 1000 in males over 50 and 96·3 per 1000 in females over 50. No persons under nine years were depigmented. The majority of sites were on the upper limbs.

Sections of achromic skin were stained with silver but no spirochaetes were found. In early stages of depigmentation the Wassermann reaction was positive but it was frequently negative in established stages of achromia. (The author does not state how he distinguished vitiligo from treponemal depigmentation, and vitiligo and depigmentation of old scars is not uncommon among Africans.)

*G. D. Morrison*

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**Changes in intravascular complement and anti-treponemal antibody titres preceding the Jarisch-Herxheimer reaction in secondary syphilis**


Serial samples of blood were obtained over a period of eight hours from six patients with secondary syphilis and one control subject after they had been injected with 600 000 units of procaine penicillin intramuscularly. One patient was given 500 mg erythromycin because of sensitivity to penicillin. Two patients developed a severe, two a moderate, and one a slight Herxheimer reaction. The patient given erythromycin and the control patient had no reactions.

FTA-ABS tests with anti-IgG and IgM conjugates and TPHA tests showed a fall in titre followed by a rise to the pre-treatment level in the patients who developed reactions. TPI titres rose during the first six hours but the VDRL titres remained unchanged.

Development of a Herxheimer reaction was preceded by a reduction in total haemolytic complement and falls in the levels of C1 esterase inhibitor, C4, C3, C6, and C7. Immune complexes were not detected. The significance of these changes in relation to other plasma enzyme systems is discussed.

*A. E. Wilkinson*

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**Qualitative evaluation of the reagin screen test**


After a preliminary study of 557 sera used as a procedural training exercise, the reagin screen test (RST) for the macroscopic detection of reagin (as an aid to detecting syphilis) was qualitatively compared to the rapid plasma reagin (RPR) slide test on 435 random portions of sera using fluorescent treponemal antibody adsorption (FTA-ABS) results as a comparative base. A comparison of total agreement (positive and negative) with the FTA-ABS results led to the following order: RPRCT (85·5%), VDRL (79·8%), and RST (74·5%). Of the total samples shown to be reactive by the FTA-ABS procedure, the percentage of these interpreted as non-reactive (that is, false negative) by the procedures compared was considerably higher with the RST procedure (29·3%) than with either the RPRCT (10·9%) or the VDRL (7·1%) procedures. Minor problems encountered with procedural techniques are also mentioned.

*Authors’ summary*
Abstracts

Positive FTA-ABS tests in subjects with corticosteroid-induced uveitis

Considerations on comparative statistical study on syphilis serology in metropolitan and trans-Mediterranean areas

Computerisation of a large antenatal serology service

Syphilis (Pathology and experimental)

Depression of lymphocyte response to concanavalin A in rabbits infected with Treponema pallidum [Nichols strain]
C. S. PAVIA, J. D. FOLDS, AND J. B. BASEMAN (1976). Infection and Immunity, 14, 320

Rabbits were infected intratesticularly with $5 \times 10^6$ virulent Treponema pallidum and control animals injected with heat-killed treponemes or saline. Blood was sampled at intervals and lymphocyte cultures set up in medium containing 10% inactivated fetal calf serum, normal rabbit serum, and serum from the donor rabbit. After exposure to concanavalin A (2.5 μg/0.1 ml) and incubation, [PH] thymidine uptake was measured.

In the infected animals but not the controls, lymphocyte transformation was markedly depressed one to three weeks after infection, corresponding to the period during which orchitis and ulcerated lesions developed in the infected animals. After about four weeks blastogenesis returned to the normal pre-infection level. These results are interpreted as showing a temporary depression of cell-mediated immunity in the early stage of infection; this may reflect ineffectual clearance of the treponemes.

Rabbits were injected intradermally at six sites with $10^6$ Treponema pallidum; when lesions had developed, the number of treponemes in 5 μl serum obtained by scarifying the lesions was estimated before and 24 hours after treatment. The minimum number of organisms detectable by this method was 10 per ml.

Groups of four rabbits were given single injections of (a) 15 and 40 mg/kg clindamycin phosphate, (b) 12 and 40 mg/kg erythromycin ethyl succinate, and (c) 10 000 units/kg procaine penicillin G. Only penicillin produced a significant lowering of the treponeme count (to < 1 treponeme). When the three antibiotics were given twice daily for seven doses, clindamycin reduced the treponeme count to between one-fifth and one-seventh of the pretreatment level, but the low dose of erythromycin and penicillin reduced it to < 1 treponeme.

Gonorrhoea (Clinical)

Hyperamylasemia associated with gonococcal salpingitis and perihepatitis

This short paper records a case of hyperamylasemia, or raised serum amylase, in a 19-year-old girl of an unstated race, who presented with an acute abdominal emergency, which was subsequently diagnosed as being caused by salpingitis complicated by perihepatitis. Laparotomy showed liver capsular adhesions, but a biopsy was normal. There was tubular oedema and exudate, and Neisseria gonorrhoeae were cultured from the cervix and rectum.

The high serum amylase (initially 640 Somogyi units/100 ml) was considered to be derived from the Fallopian tubes, which are known to be rich in amylase. A relatively normal amylase to creatinine clearance ratio (4.0:4.6%) was found to be of value in differentiating from pancreatic hyperamylasaemia, in which it is raised.

Diagnosis of gonorrhoea in women— influence of the contraceptive pill

An investigation was carried out to determine if the diagnosis of gonorrhoea in women by endocervical smear and culture differed in those taking oral contraceptives from those not taking them. One hundred and fifty female contacts of men with gonorrhoea were investigated, half of whom were taking an oral contraceptive. Urethral, endocervical, and rectal specimens were examined by Gram's stain and by culture on selective and non-selective media. No significant difference was observed in the number of patients suffering from gonorrhoea at any site between those taking and those not taking the contraceptive pill, neither was there any difference detected in infection of the cervix. Thus, changes in the cervix during the course of oral contraception have no detectable influence on the diagnosis of gonorrhoea.

Authors' summary

Gonococcal periappendicitis and salpingitis in a prepubertal girl
Gonorrhoea (Microbiology)

Evaluation of methods for the rapid identification of *N. gonorrhoeae* in a routine clinical laboratory


Of 78 isolates of *Neisseria gonorrhoeae*, 21 failed to grow and produce acid in unsupplemented cystine-Trypticase agar (CTA); whereas positive reactions obtained by using serum-supplemented CTA and fluorescent antibody (FA). An additional 290 strains of *Neisseria* were evaluated by FA and by a rapid carbohydrate degradation technique (RF). There was agreement between the two methods 92% of the time on the initial carbohydrate degradation technique (RF). There was agreement between the two methods 92% of the time on the initial trial and 99% of the time with repeats on discrepancies. The RF and FA tests provided rapid and reliable identification of *N. gonorrhoeae*, alleviating the problems of CTA owing to lack of growth and need for overnight incubation.

Author's summary

Genetic transformation as a tool for detection of *N. gonorrhoeae*


A rapid method for the detection of *Neisseria gonorrhoeae*, making use of the ability of deoxyribonucleic acid samples from clinically isolated strains of this organism to transform nutritional mutants of a particular strain of *N. gonorrhoeae* is described. In addition to using isolated cultures, transforming deoxyribonucleic acid can be obtained directly from the material that adheres to swabs of the cervix or the urethra. The time interval for transfer of swabs to the diagnostic laboratory is not a significant factor. It is not necessary to use pure cultures on primary isolation plates to obtain definitive results. Non-gonorrhoeae neisserias, as well as a large variety of commonly encountered unrelated bacteria, do not react or interfere in the transformation assay when using one of the mutant strains under a standardised set of conditions. The entire assay can be completed in less than 24 hours. It is also shown that type T4 cells of the strain of *N. gonorrhoeae* employed in the present study are competent for genetic transformation, although type T4 cells are transformed at a significantly lower frequency than are type T2 cells of the same strain.

Author's summary

The Papanicolaou smear as a technique for gonorrhoea detection


Papanicolaou smears obtained from 150 patients were studied to determine the screening accuracy of identifying diplococci during active gonococcal infection. Diplococci were cytologically identified in 62% of adequate smears obtained from culture-positive cases. No false-positives were reported. The yield of diplococci noted on the surface of metaplastic junctional cells was greater than that found within the cytoplasm of polymorphonuclear leucocytes. Adequacy of cytological smears in determining the presence of diplococci requires a complement of metaplastic cells. This technique deserves further evaluation as a screening test for gonorrhoea detection in asymptomatic women.

Author's summary

Interference of *N. gonorrhoeae* growth by other bacterial species


Growth of *Neisseria gonorrhoeae* from clinical specimens has been enhanced by the use of selective media that inhibit the simultaneous growth of other microorganisms. One explanation for this enhancement is that certain other bacteria inhibit gonococcal growth. This hypothesis was examined by testing 167 bacterial isolates for *in vitro* gonococcal inhibition; 34-1% of the isolates failed to inhibit the gonococcus, but 12-0% produced weak inhibition and 53-9% strongly inhibited *N. gonorrhoeae*. The pattern of *in vitro* gonococcal inhibition was consistently the same for all the individual isolates within some species, but individual isolates within other bacterial species varied in their ability to inhibit the gonococcus. Consistently strong *in vitro* *N. gonorrhoeae* inhibitors were *Citrobacter diversus*, *Enterobacter cloacae*, *Serratia marcescens*, and *Pseudomonas*. The *in vivo* significance of gonococcal interference was demonstrated in the subcutaneous chamber model of *N. gonorrhoeae* infection.

Author's summary

Carbon dioxide requirement of *N. gonorrhoeae* growing on a solid medium


A survey of 120 isolations of *Neisseria gonorrhoeae* from male patients showed that 47 (39%) isolates were unable to produce visible colonies without a supply of exogenous carbon dioxide. Of 63 strains, 25 strains required CO₂ for growth, but none exhibited a CO₂ requirement beyond subculture. CO₂ was required for the growth of a large number of strains deprived of CO₂, as well as for colonies growing at a slow rate or requiring a humid environment during their early stages of growth. The CO₂ requirement was found to be linked to the initiation of growth. An agar-to-agar replica-plating device was used to study the growth of the early stages of colonies. The CO₂ requirement was found to correlate with the various phases of the colony growth. The CO₂ requirement was found to correlate with the various phases of the colony growth; that is, CO₂ was not required during the lag phase, not required during the period of rapid growth, and was required during the phase of slowing down. These results are discussed.

Author's summary

Fluorescent antibody test for the serological diagnosis of gonorrhoea


An indirect fluorescent antibody technique has been developed for the serological diagnosis of gonorrhoea. The selected strain(s) of *Neisseria gonorrhoeae* possesses a heat-labile surface antigen (LOS antigen). Sera are diluted 1:10, and an aliquot is heat inactivated at 59°C for 30 minutes. The treated and untreated aliquots are then examined for human immunoglobulin G anti-LOS-antigen. In a preliminary study of 495 sera, 95% of those from women with a bacteriologically confirmed diagnosis of gonorrhoea and 87% of those from men were reactive in this test, whereas only 14% of the sera from presumably normal individuals were reactive.

Author's summary
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Phospholipid composition and phospholipase A activity of *N. gonorrhoeae*

Comparison of spontaneous and antibiotic-induced L form production in *N. gonorrhoeae*

Specificity of inhibition of epithelial cell adhesion of *N. gonorrhoeae*
E. C. TRAMONT (1976). Infection and Immunity, 14, 593

Bacteriocin production by *N. gonorrhoeae*

Method for detecting antibody formation to *Neisseria gonorrhoeae*

Inability of *Neisseria gonorrhoeae* pili antibodies to confer immunity in subcutaneous guinea-pig chambers

Non-specific genital infections

Fluorescent antibody studies in chlamydial infections

Most previously described immuno-fluorescent techniques for detecting antibodies to *Chlamydia trachomatis* in human sera have used preparations of yolk sac-grown elementary bodies as antigen. In this study whole chlamydial inclusions, rather than individual elementary bodies, were used as antigen in an indirect immuno-fluorescent test. The inclusions were obtained by growing McCoy cells heavily infected with genital strains of *C. trachomatis* in wells on Teflon-coated slides. This test was capable of detecting both group-specific chlamydial antibodies in sera from patients with psittacosis as well as type-specific antibodies to *C. trachomatis* in sera from patients attending venereal disease (VD) clinics. Chlamydial antibodies were found more frequently and in higher titre in sera from women attending VD clinics than in sera from a less promiscuous population attending a Family Planning Association clinic. Paired sera from 13 patients with non-gonococcal urethritis from whom chlamydiae had been isolated were tested against the homologous isolates; seroconversion was demonstrated in only one instance, and antibody was present in the first serum specimens of all the other patients.

Authors' summary

Simplified serological test for antibodies to *Chlamydia trachomatis*

Three hundred and sixty sera from unselected patients attending two London venereal disease clinics were examined by a micro-immunofluorescence test. Eleven egg-grown serotypes of *Chlamydia trachomatis* and the so-called ‘fast’ strain SA2(f) were used as antigens. Of the 360 sera tested, 119 (33%) reacted to a titre of 1:16 or above with at least one antigen. Of these positive sera, over 50% cross-reacted with all 12 serotypes, and 95-5% reacted with SA2(f) in addition to other antigenic types. It is suggested that SA2(f) could be used as a single antigen for preliminary screening of a large number of sera for the presence or absence of chlamydial antibody.

Authors' summary

Isolation of *Chlamydia trachomatis* in tissue cultures of human thyroid (Letter)

Inclusion blemorrhoea. A case report

Differential agar medium (A7) for identification of *Ureaplasma urealyticum* (Human T mycoplasmas) in primary cultures of clinical material

Reiter's disease

HL-A27-associated arthritis

Of 78 patients with a rheumatoid-factor-negative inflammatory arthritis and a clinical diagnosis of ankylosing spondylitis or Reiter's syndrome, 91% were found to possess the histo-compatibility antigen HL-A27.

A retrospective study of these 78 patients showed an even distribution of arthritis between those whose initial symptoms involved axial joints (intervertebral and sacro-iliac) and those in whom peripheral joints were involved initially (33:38). In both groups large joint involvement was twice as common as that of small joints. The lower limbs were more frequently affected than the upper. The commonest peripheral joint to be involved was the knee (54%). The arthritis of these patients could be grouped into four main components, occurring singly or in combination—spondylitis, sacro-iliitis, peripheral polyarthritis, and oligoarthritis. Extra-articular features such as genito-urinary inflammation and anterior uveitis were present in a proportion of the patients.

As the distinction between ankylosing spondylitis and Reiter's syndrome is not always clear, the authors put forward the concept of a sero-negative arthritis associated with HL-A27, which could be subdivided into four groups—axial arthritis, peripheral polyarthritis, oligoarthritis, and a mixed arthritis. They suggest that each of the four principal components may be influenced by different genetic determinants.

C. S. Ratnatunga

HL-A27 in Reiter's syndrome
J. C. MCGLAMORY (1976). Military Medicine, 141, 95

Trichomoniasis

Application of WISH cell cultures to produce large populations of vaginal trichomonads
Candidosis

Comparative isolation of vaginal yeasts on selective and non-selective media

The isolation of vaginal yeasts was compared on a selective medium, phosphomolybdic acid agar, and on starch agar, a non-selective differential medium used primarily to isolate Corynebacterium vaginale. The majority of the Candida albicans strains were isolated on starch agar, but the selective medium was required for isolating all yeasts from the greatest number of specimens.

Authors' summary

A quantitative study of the growth of Candida albicans in vented and unvented blood-culture bottles

Basis for the design of antifungal agents from studies of peptide utilisation in Candida albicans

Gynodaktarin (miconazole nitrate) for vulvovaginal candidiasis

Candida albicans and polyene antibiotics (Letter)

Herpes

Genital herpetic infection in men and women: clinical course and effect of topical application of adenine arabinoside

Sixty-three episodes of genital herpetic infection in 55 men and 45 episodes in 42 women were randomly assigned to topical treatment with 3% adenine arabinoside, topical treatment with placebo ointment, or no therapy. In addition, 10 episodes in women who were not randomly assigned to therapy were evaluated and followed-up. Clinical evaluation and viral cultures were done on day 3, day 8, and weekly thereafter until the lesions had healed. The natural clinical course of genital herpetic infection was defined in patients given placebo or no therapy. Patients with a history of previous genital herpetic infection had significantly less pain, fewer lesions, and shorter duration of illness and viral shedding than patients who had no history of previous genital infection with Herpesvirus. An unexpected finding was that 87% of women experiencing their first episode of genital herpetic infection had cervical cultures positive for Herpesvirus hominis, whereas only 4% of women with recurrent herpetic infection had a positive cervical culture. Treatment with 3% adenine arabinoside did not influence the course of either primary or recurrent genital infection with Herpesvirus.

Authors' summary

Sexually transmitted cancers? The case for genital herpes
L. AURELIAN (1976). Journal of the American Venereal Disease Association, 2, 10

Evidence is presented for the venereal transmission of squamous carcinoma of the human cervix. Risk, rate, coital, marital, and parity factors are discussed. The evidence associating this neoplasia with a viremically-transmitted virus, herpesvirus type 2 (HSV-2), is critically reviewed. In the context of the aetiology hypothesis, evidence is presented that an antigen, designated AG-4 and apparently associated with active tumour growth, is a virus structural protein that is also located on the cell surface. The data indicate that the virus plays an active role in tumour growth and suggest a possible mechanism for this involvement.

Author's summary

Herpes simplex virus—an obstetric hospital problem

Recurrent conjugal neuralgia caused by herpesvirus hominis type 2

Minocycline in the treatment of lymphogranuloma venereum

In a study of 80 cases of lymphogranuloma venereum (LGV), minocycline hydrochloride was found to be an effective drug in the treatment of all stages of LGV, including complicated ones. In late cases adjuvant treatment was used in addition to the antibiotic. Healing time in uncomplicated cases was less than 10 days.
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In complicated cases, both early and late, healing took about two to three weeks. Reactions to the drug were not significant.

Authors' summary

Granuloma inguinale: with several unique features
M. J. GRANEY AND G. R. BODON (1976). New York State Journal of Medicine, 76, 433

Conjugal chancre
J. P. BERGUES (1975). Bulletin de la Société française de dermatologie et de syphiligraphie, 82, 301

Treatment of today's scabies and pediculosis

Public health and social aspects

Syphilis, homosexuality and legislation

Miscellaneous

The risk of pelvic inflammatory disease in women using intrauterine contraceptive devices as compared to non-users

The frequency of women using an intrauterine contraceptive device (IUD) among 515 patients presenting with acute laparoscopically verified salpingitis has been compared with the corresponding frequency in 741 sexually active women who were matched to the patients by date of birth, domicile, and socioeconomic status. The frequency of IUD use was significantly ($p < 0.001$) higher in the patients than in the controls. It was estimated that the relative risk of acute salpingitis for any woman using an IUD was threefold as compared to non-users. For women using IUDs who had not been pregnant at any time, the corresponding risk was found to be sevenfold.

Authors' summary

Intrauterine devices and acute pelvic inflammatory disease

Women seeking emergency medical treatment at the Grady Memorial Hospital, Atlanta, were investigated in this study from the Centre for Disease Control.

Pelvic inflammatory disease (PID) was defined as comprising a history of abdominal pain with uterine or adnexal tenderness on pelvic examination in women in whom no alternative diagnosis was present, either at the time of examination or during the following month. Two groups of women with PID were studied: (1) 50 patients with temperatures of $38\degree C$ or above, and (2) 100 patients with temperatures of under $38\degree C$. A group of 200 women who were seeking treatment for acute disorders other than PID in the emergency room at the same time as the women with PID acted as controls.

Only women between the ages of 15 and 44 years were selected, and for various reasons those not requiring contraception were excluded from the study. All the women completed questionnaires including demographic, medical, and contraceptive histories.

The three groups were similar in several respects: Blacks composed more than 90% of each group, the average educational age was 11 years, about 20% were married and fewer than 15% had a private physician. Of the febrile cases, 42% were aged 19 or less, compared with 30 and 29% of the afebrile cases and controls respectively. Of the febrile cases, 18% had never been pregnant, whereas pregnancy had occurred in respectively 27 and 29% of the afebrile cases and controls.

There was a previous history of PID in 58% of the febrile cases of PID and in 75% of the afebrile cases. In 43-5% of the controls there was a previous history of PID.

Overall, 39-4% of the women used no contraception, 31-1% were taking an oral contraceptive, and 18-6% wore an intrauterine device (IUD); the remaining 10-9% used other methods of contraception. Of the cases of febrile PID, 38% were using an IUD at the time of diagnosis, compared with 24% of the afebrile cases and 11% of the controls. There was no association between the time the IUD had been used and the development of febrile or afebrile PID.

It was calculated that the user of an IUD had a fivefold increased risk of contracting PID in comparison with the non-user. The effects of age, previous pregnancies, previously diagnosed PID, frequency of intercourse, and the number of sexual partners did not substantially alter these results.

David H. Jackson

Clinical pathology of the Jarisch-Herxheimer reaction
A. D. M. BRYCESON (1976). Journal of Infectious Diseases, 133, 696

The Jarisch-Herxheimer reaction is a complication that can follow treatment of several infectious diseases. Its most severe form is in louse-borne relapsing fever; in this syndrome the reaction can cause death. Information from studies in Ethiopia during the past eight years is presented, and clinical, physiological, and immunological features of the reaction are described. Possible causative mechanisms of the reaction are discussed, especially in relation to the role of endotoxin. An attempt is made to consider this reaction in relation to other endotoxin-associated states.

Authors' summary

Risk of pelvic infection associated with intrauterine devices (Leading article) (1976). British Medical Journal, 2, 717

Vaginal flora in asymptomatic women

Ophthalmia neonatorum—chart review

Marital urinary infection (Letter)

Marital urinary infection (Letter)
D. BROOKS (1976). British Medical Journal, 2, 813