Conference Report: The International Society for STD Research Ninth International Meeting, Banff, Canada, October 1991

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The International Society for STD Research exists to promote research in all aspects of sexually transmitted disease and stages a conference every two years. The Society is refreshingly free of bureaucracy, constitutions and officialdom. As a result, its conferences are a relaxed venue for the presentation and discussion of the best research worldwide. The 1991 conference, chaired by *Dr Allan Ronald*, was held in the spectacular Rocky Mountain resort of Banff, in a hotel reminiscent of a Bavarian castle, but on a typically North American scale.

The opening plenary session illustrated the wide range of topics discussed. The speakers included *Taylor-Robinson* who carefully reviewed the evidence that mycoplasmas may play a role in the pathogenesis of AIDS. He found the case still unconvincing [PL-01-149]. The early work may have been flawed by laboratory contamination. The subsequent discovery that mycoplasmas can be intracellular pathogens, contradicting previous dogma and providing a basis for interaction, renewed interest in this hypothesis. *Hillier* discussed the vagina as an ecosystem in a lively and colourful talk. She concentrated on the role of hydrogen peroxide-producing lactobacilli in protecting against both bacterial vaginosis and sexually transmitted diseases (STDs) such as trichomoniasis [PL-01-243]. Although the importance of lactobacilli may have been confirmed, there is no satisfactory method of re-establishing a normal vaginal flora. Two poster presentations contained evidence for an association between bacterial vaginosis and premature labour [P-04-217, P-04-68] but other risk factors for premature labour were not controlled for.

Chlamydia trachomatis

In a plenary session, *Stephens* discussed some elegant new work on the biology of *Chlamydia trachomatis*, in particular the role of a heparin receptor in the host-cell interaction [PL-01-257]. *Wyrick* described an in vitro model of cultured endometrial cells which permit persistent chlamydial infection in the presence of penicillin. This system allows for the study of chlamydial antigens expressed on the cell surface [C-06-032]. In contrast to this encouraging work, *de la Maza* presented an attempt to develop a recombinant chlamydial vaccine using vaccinia virus as the expression vector for the major outer membrane protein [C-06-126]. Although neutralising antibodies were induced in mice, initial studies failed to show any protection.

Two new diagnostic techniques for chlamydial diagnosis were discussed: polymerase

chain reaction (PCR) and chemiluminometric immunoassay. An interesting report of a simplified PCR technique (Roche Diagnostic Systems) was presented [C-07-079] although it is still uncertain whether PCR will establish itself as a diagnostic method, or remain primarily a research tool. Chemiluminometric immunoassay (Magic Lite-Ciba-Corning) gives a qualitative and semiquantitative measure of the presence of *Chlamydia trachomatis* [C-07-099, C-07-162]. Although this appears to be a sensitive and specific test doubts were expressed concerning the ability of this technique to 'allow confirmatory testing of samples giving positive results and repeat testing of "borderline" samples.

Several studies compared the safety and efficacy of azithromycin, (lg single dose) with one week doxycycline in the treatment of chlamydial infection [P-20-098, P-20-181, P-20-223]. Although no difference was observed all the studies were small. In a review, *Schachter* noted that azithromycin added to an in vitro system of chlamydial infection in endometrial cells leads to an increased release of elementary bodies [C-06-250]. The significance of this observation is unknown.

Hepatitis B

One session was devoted to hepatitis B and began with a review of the current epidemiology of sexual transmission of HBV infection, in particular the increasingly important contribution of heterosexual spread. The rest was concerned with prevention: how to make best use of hepatitis B vaccine. *Anderson* discussed the results of some early attempts to model the impact of different immunisation strategies. While in most parts of the world, where HBV is endemic, the only rational approach is to immunise universally, in low endemicity countries such as the United Kingdom a targeted programme might still be feasible and effective.

Syphilis

Hook reviewed recent changes in the epidemiology of syphilis in the USA including the decline in the male to female ratio of cases, the high rates in blacks (discussed further by *Nakashima* [C-11-122]) and the associations with prior syphilis, drug use and HIV-infection. The last is complicated by the loss of reactivity in serological tests reported by *Rompalo et al* [P-19-111] and the significant association between HIV and biological false positive reactions. In the USA the reintroduction of routine syphilis serology in hospital

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inpatients is being considered after the finding of a 13% seropositivity rate in one study, even though half of these are likely to be false positives. *Baker-Zander* reported work on the pathogenesis of syphilis using the rabbit model. She showed that *Treponema pallidum* was killed by macrophages, and that this could be enhanced by the addition of immune serum [C-11-085].

Epidemiology of HIV

In a session largely devoted to the epidemiology of HIV among heterosexuals, *Quinn* described the increasing importance of heterosexual transmission in the USA and discussed some of the behavioural and biological factors which may determine it [C-19-107]. He referred to *Padian's* published work showing a higher rate of transmission from male to female, than female to male. Later *Padian* presented data on risk factors for male to female transmission; although anal intercourse and bleeding during intercourse increased the risk of transmission, most of the women became infected in the absence of these risk factors [C-19-084]. *Kamb* reported a study in an STD clinic in which half of the 12% prevalent cases of infection were attributable to heterosexual contact or no other identifiable risk [C-19-095].

Intervention

Danielson discussed the downward trend in the rates of gonococcal and chlamydial infection in Sweden which has been paralleled by a decline in pelvic inflammatory disease [C-22-252]. Specific public health measures to combat chlamydial infection were introduced in 1988 and rates of chlamydial infection have been declining since then. *N. gonorrhoeae* rates have been declining since the early 1970s and gonorrhoea is now a rare disease in Sweden.

The important role that spermicides may play in the prevention of STDs was discussed in a meta-analysis of 65 studies [C-22-014]. Surprisingly, this indicated that users of spermicide containing contraceptives were at a significantly lower risk of chlamydia, gonorrhoea and trichomoniasis compared with those who used condoms. It is unclear whether differences in sexual behaviour were controlled for. A study among Bangkok sex industry workers compared Nonoxynol-9 film with placebo [C-22-028]. After controlling for condom use, number of partners, douching and contraceptive method, there was a significant reduction in gonorrhoea and chlamydial infection in Nonoxynol-9 users. It has been speculated that spermicide might lead to mucosal disruption and facilitate HIV transmission but in this study there was no increase in genital ulceration in the spermicide-using group.

Drug use and sexually transmitted diseases

A session at the conference was devoted to the important relationship between drug use and STDs. *Rolfs* [C-21-115] described the close association between crack-cocaine use and the acquisition of syphilis in discussing the possible causes for the current epidemic of syphilis

in the USA. Patients with infectious syphilis were significantly more likely than controls to meet sexual partners in "crack houses", to inject drugs, or to exchange drugs or money for sex. *Greenberg* [C-21-166] echoed these findings and suggested that patients with syphilis who were crack-users are more likely to have anonymous sexual intercourse (leading to difficulty with partner notification) and to underutilize available medical resources for syphilis control. It was noted that crack-users significantly delayed attendance for syphilis treatment and were therefore at risk of transmitting syphilis for a longer period. She suggested that outreach syphilis serology screening at crack-houses would be an effective method of case finding.

Gomez suggested that the epidemic of syphilis may be a co-factor, or at least a marker of a heterosexual HIV epidemic [C-21-174]. He described the experience in the Bahamas during the past 10 years where there have been sequential epidemics of crack use, genital ulcer disease and heterosexually acquired HIV-infection.

Adolescent sexuality

In a plenary lecture on the epidemiology of sexual behaviour, *Bowie* concentrated on behaviour and disease patterns in adolescents [PL-02-263]. Gonorrhoea rates continue to increase in Canada in women aged 15–19 years in contrast to other age groups. A large cross-sectional study of sexual behaviour in Canadian adolescents has confirmed that this group is at risk of STDs. Risk taking behaviour was associated with alcohol use, poor relationship with parents, and a reported difficulty in saying "no" to sexual intercourse. Similar conclusions were suggested by a study in San Francisco [C-05-050] which showed high rates of drug use, unsafe sexual activity and STDs among adolescents. Two studies correlating sexual behaviour with knowledge of safer sex practices were presented [P-05-153 from Kenya and P-05-042 from Sweden]. Both indicated that adolescents continued to put themselves at risk of STDs despite a reasonable level of knowledge.

In an attempt to bridge the gap between knowledge and behaviour the overview speaker, *Fisher* presented a model for the primary prevention of STDs in adolescents. This strategy depends not only on information on safer sex, but recognises the importance of changing motivation and improving behavioural skills.

STD issues in the developing world

The medical, economic and social implications of the epidemics of STDs and HIV in the developing world were explored by a number of speakers. The evidence for a positive feedback loop between HIV transmission and the transmission of other STDs was reviewed by *Plummer* [PL-02-248]. The potential importance of controlling both ulcerative and non-ulcerative STDs in combatting the heterosexual HIV epidemic was stressed. The suggestion that HIV may exacerbate STDs was supported by a study from Baltimore

suggesting that HIV-seropositive patients with genital ulcer disease had more widespread and prolonged lesions than HIV-seronegative patients with genital ulcers [P-19-109]. Further evidence for an intact foreskin increasing the risk of HIV transmission was presented [P-19-036]. There was a disappointing parallel session on STDs in developing countries. Few results were presented even though several large and reputedly successful studies of interventions have been undertaken.

The cost-effectiveness of controlling HIV and STDs in developing countries was discussed by *Piot* [PL-03-249]. The importance of allocating the limited funds available to the most appropriate strategies was stressed as was the need for STD control relative to other public health programmes.

Two of the last speakers focused on the impact of HIV and STDs on women. *Decosas* described the societal impact of HIV in Africa particularly in relation to the predominance of infection amongst younger women [PL-03-266]. He went on to discuss possible interventions to tackle these problems such as increased education and urban migration of women. *Cates* examined the worldwide impact of STDs on fertility [PL-03-239] and the problems associated with infection control particularly the high rate of "silent" pelvic inflammatory disease and the delay between infection and the diagnosis of sub-fertility.

Conference abstracts: Readers without access to the book of abstracts may request photocopies of those in which they are particularly interested from Dr Gilson.