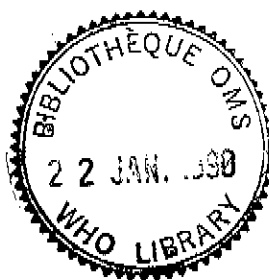

GLOBAL
PROGRAMME
ON **AIDS**
AND
PROGRAMME
OF **STD**

CONSENSUS STATEMENT
FROM CONSULTATION ON
SEXUALLY TRANSMITTED DISEASES
AS A RISK FACTOR FOR
HIV TRANSMISSION

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Consensus statement from consultation on sexually transmitted diseases as a risk factor for HIV transmission

A Consultation on sexually transmitted diseases (STD) as a potential risk factor for human immunodeficiency virus (HIV)¹ transmission was convened by the World Health Organization's Global Programme on AIDS (GPA) and Sexually Transmitted Disease Programme (VDT) from 4-6 January 1989 in Geneva. A total of 32 participants from 21 countries participated, including experts in public health, epidemiology, biomedical and social science aspects of STD and AIDS.

Introduction

On a worldwide basis, sexual transmission is the most important route of HIV spread and the Global AIDS Strategy and national AIDS programmes have proposed extensive programmes to prevent sexual transmission of HIV. In this context, information regarding biological factors which may influence the sexual transmission of HIV is potentially of great importance for the design and conduct of HIV prevention programmes. STD are priority health problems in many areas of the world and national prevention and control programmes have been developed and implemented, but often need strengthening.

Recent studies have suggested that STD, particularly those which cause genital ulceration², may facilitate the transmission of the human immunodeficiency virus, Type 1 (HIV-1). Accordingly, WHO convened a consultation to develop consensus based on critical analysis of available evidence regarding the potential role and importance of STD as a risk factor for HIV-1 transmission.

The Consultation had the following objectives:

1. review and assess the available data regarding STD as a risk factor for HIV transmission;
 2. identify future research priorities and methodologies for better understanding of the biological interactions between HIV and STD;
 3. consider strategic and programmatic implications of the results of discussion on objectives 1 and 2.
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The Consultation developed the following consensus statement:

A. STD as a risk factor for HIV transmission

1. While HIV-1 is transmitted sexually in the absence of other STD, the weight of the evidence for genital ulcer disease (GUD) as a risk factor for HIV-1 transmission is sufficiently strong that GUD intervention may contribute to prevention of sexual transmission of HIV-1.
 2. Several studies in developing countries have shown that GUD is associated with HIV-1 infection in heterosexuals. A few studies have shown an association of antibody to herpes simplex virus type 2 (HSV-2) and to *Treponema pallidum* (the major causes of genital and anorectal ulcers in industrialized countries) with HIV-1 infection in homosexual men and in heterosexual men and women.
 3. Evidence for these associations is consistent in most studies but because GUD and HIV-1 are both sexually transmitted it is necessary to examine only studies that have attempted to measure and adjust for confounding and bias, primarily involving sexual behaviour.
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1. HIV is used throughout this document unless the data are specific for HIV-1 or HIV-2.

2. Herein referred to as genital ulcer disease (GUD) although some of these ulcerations may not be clinically evident.

4. The evidence is strongest for GUD in Africa where prospective studies have been done, which have given consistent results. There is also evidence for a temporal association between GUD and HIV-1 infection which further suggests that GUD facilitates transmission of HIV-1.
5. Sero-epidemiological studies which have examined the relationship of HIV-1 with HSV-2 and *Treponema pallidum* have demonstrated a consistent association of the two with HIV-1 infection. Some evidence in homosexual men suggests that a temporal association exists for HSV-2 and HIV-1.
6. While some studies have found an association between other STD pathogens or STD syndromes and HIV-1 infection, the available data are inconsistent and insufficient to assess their role as risk factors for HIV-1 transmission.
7. It is biologically plausible for all STD pathogens that cause genital ulcers or inflammation, to be risk factors for increased infectiousness or increased susceptibility to HIV-1 infection.
8. In general, it is not possible from available data to distinguish an effect on increase of susceptibility to HIV-1 infection in an HIV-seronegative person with an STD, from an effect on increased infectiousness of HIV-1 in a HIV-seropositive person with an STD.
9. The importance of genital ulcers on increasing transmission at the population level (population attributable risk), as opposed to the individual level, has been calculated in only one study of prostitutes and STD clinic patients and cannot be generalized. Therefore, the proportion of sexually transmitted HIV-1 infections which can be attributed to GUD has not yet been defined for the general population.
10. Intervention trials have not yet been done, the results of which may further support GUD as a risk factor in increasing HIV-1 transmission; such trials would further be helpful in assessing the effectiveness of GUD control in reducing the sexual transmission of HIV-1.

B. Research priorities

The main needs identified for further research are:

1. Effectiveness of GUD control in reducing sexual transmission of HIV-1 (intervention trials).
2. The effects of STD on HIV-1 transmission. Although a large volume of data is available in this area, few cohort studies have been performed and rigorously controlled for microbiologic etiology of the STD and the sexual behaviour of the participants. In addition, statistical methodology to examine the effects and interactions of two highly related events need to be refined and standardized. The two specific questions that need to be examined in female to male, male to female and male to male sexual relations are: 1) Among individuals not infected with HIV-1, do STD increase susceptibility to HIV-1 infections? 2) Among those infected with HIV-1, do STD increase the likelihood of HIV-1 transmission to their uninfected sexual partners? Important factors to be included in any study are controlling for sexual behaviour, attempting to quantify HIV-1 exposure risk, examining with reliable methods all potentially important STD, with appropriate consideration being given to sample size and methods of analysis. Other factors to be considered in study design and analysis are circumcision, contraception, social class, duration of HIV-1 infection and stage of disease.
3. There is an urgent need for innovative strategies for control of GUD.
4. Studies of epidemiology and biology of STD as pertains to HIV-1 transmission and the effect of HIV-1 on STD. A better understanding of the epidemiology of some STD, such as chancroid, is required. Better assessments of population prevalence and incidence of STD are needed for determining population attributable risk and for monitoring changes in sexual behaviour. Appropriate diagnostic techniques for many STD, especially GUD, need to be developed or improved, especially for field conditions. The effect of HIV-1 infection on manifestations, recurrence, diagnosis and therapy of STD needs to be clarified. These studies need to take into account the effects of sexual orientation, gender and geographical setting on this interaction.
5. Basic research is needed on techniques for assessing sexual behaviour. In addition, it is important to collect systematic information on the sexual behaviours of different populations in all areas of the world.

6. The effect of STD on natural history of HIV-1 infection in individuals.
7. Biology of the sexual transmission of HIV-1 and STD. Basic science studies should include immunopathology of STD, genital shedding of HIV-1 with and without STD, the effects of mechanical damage to the genital epithelium and study of potential target tissues in the genital tract. Animal models may be useful to simulate sexual transmission of HIV-1.
8. As all previous studies have evaluated the association of HIV-1 and STD, it is also important to obtain information on the interaction of STD and HIV-2.
9. The Consultation also identified three priority areas for action:
 - (a) development of study design and statistical methods best adapted to examining the interactions between two highly related events, such as STD and HIV infection;
 - (b) promotion of exchange of information and discussion among investigators in this field;
 - (c) development of intervention studies on control of GUD and on the effects of GUD control on HIV transmission.

C. Strategic and programmatic implications

1. The global importance of STD, including complications and sequelae particularly in women and newborns, as well as the emergence of the HIV pandemic, mandate the development and strengthening of STD control programmes, in all countries and at all levels. For example, in countries where effective STD control does not yet exist, STD interventions should be established and integrated into already existing primary health care infrastructures.
2. The AIDS pandemic further emphasizes the urgent need for increased support for broad programmes of STD prevention, control and research. At the national and international level, STD and AIDS prevention and control programmes should work together to develop strategies and effective means of programme interaction and mutual support. In addition, it is essential that STD and AIDS researchers collaborate in areas of common interest.
3. As modes of transmission are similar, primary prevention of either STD or sexual transmission of HIV will help to reduce transmission of the other. For example, behavioural interventions including condom promotion will help reduce both STD and sexual transmission of HIV and persons at high risk for HIV infection can be reached through STD services for preventive intervention.
4. STD and AIDS programmes need to take into account the emerging evidence on GUD and HIV-1, as early and adequate management of GUD may contribute to reducing HIV-1 transmission.
5. The World Health Organization is requested to consider coordinated action to address the policy, programmatic and research issues discussed in this document.

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