

Workshop Summary:

Scientific Evidence on Condom Effectiveness for Sexually Transmitted Disease (STD) Prevention

June 12-13, 2000

Hyatt Dulles Airport

Herndon, Virginia

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EXECUTIVE SUMMARY

Background

Sexually transmitted diseases (STDs), including HIV, are common, important, and preventable causes of morbidity, mortality, disability, lost-productivity, and health care costs. In the United States, more than 65 million individuals are living with an STD, the majority of which are incurable viral infections. Approximately 15 million new sexually transmitted infections occur annually in the U.S. In the United States, approximately 493,000 individuals have died from AIDS, and 800,000-900,000 people are living with HIV disease. Many sexually transmitted infections can cause adverse pregnancy outcomes including miscarriages, stillbirths, intrauterine growth restriction and perinatal (mother-to-infant) infections. Some STDs can cause infertility or lead to ectopic pregnancy among women and one, the human papillomavirus, can cause cervical and anogenital cancer. Furthermore, other STDs facilitate HIV transmission.

The Problem and the Process

Primary prevention of STD infection is an important health priority. Unfortunately there are no STD vaccines, except for hepatitis B vaccine, and topical microbicides to prevent STDs are not available. Beyond mutual lifelong monogamy among uninfected couples, condom-use is the only method for reducing the risk of HIV infection and STDs available to sexually active individuals.

Recently, a number of Federal agencies sponsored a workshop to answer the following question: "What is the scientific evidence on the effectiveness of latex male condom-use to prevent STD transmission during vaginal intercourse?" This workshop was attended by 180 persons, and the data from numerous peer-reviewed published studies were discussed. Following the workshop, a panel of 28 experts worked to develop this report.

The sessions included review of published information on the properties and user patterns of the male latex condoms for vaginal intercourse and included data from studies on pregnancy prevention. Focused research studies have documented the high effectiveness of condoms for prevention of pregnancy. The data associated with condom use in eight specific STDs were considered in detail, including HIV infection, gonorrhea, chlamydial infection (including gonococcal and chlamydial pelvic inflammatory disease), syphilis, chancroid, trichomoniasis, genital herpes, and genital HPV infection and associated diseases (i.e. cervical dysplasia, cervical cancer and genital warts).

The meeting was not intended to make public health policy recommendations regarding the role of condoms in HIV/STD prevention policy and programs.

Assessment of the Data

In general, the Panel found the published epidemiology literature to be inadequate to definitively answer the question posed to the workshop participants. Most studies reviewed did not employ a prospective design, which is the optimal method to assess the effectiveness of condoms in preventing infection.

Conclusions on STDs Transmitted by Genital Secretions

The published data documenting effectiveness of the male condom were strongest for HIV. The Panel concluded that, based on a meta-analysis of published studies “always” users of the male condom significantly reduced the risk of HIV infection in men and women. These data provided strong evidence for the effectiveness of condoms in preventing HIV transmission in both men and women who engage in vaginal intercourse.

The Panel also concluded that the consistency of findings across four epidemiological studies of gonorrhea indicated that the latex male condom could reduce the risk of gonorrhea for men.

The strongest evidence for potential effectiveness of condoms on other STDs transmitted by genital secretions (i.e. gonorrhea in women, chlamydial infection and trichomoniasis) was the laboratory-based studies on the properties of the male latex condom and the strength of the evidence for condom use reducing the risk of HIV transmission in men and women and gonorrhea in men. The Panel concluded, however, that because of limitations in study designs there was insufficient evidence from the epidemiological studies on these diseases to draw definite conclusions about the effectiveness of the latex male condom in reducing the transmission of these diseases.

Conclusions on Genital Ulcer Diseases

The Panel agreed that the published epidemiologic data were insufficient to draw meaningful conclusions about the effectiveness of the latex male condom to reduce the risk of transmission of genital ulcer diseases (genital herpes, syphilis and chancroid).

Conclusions on HPV

For HPV, the Panel concluded that there was no epidemiologic evidence that condom use reduced the risk of HPV infection, but study results did suggest that condom use might afford some protection in reducing the risk of HPV-associated diseases, including warts in men and cervical neoplasia in women.

Summary

The Panel stressed that the absence of definitive conclusions reflected inadequacies of the evidence available and should not be interpreted as proof of the adequacy or inadequacy of the condom to reduce the risk of STDs other than HIV transmission in men and women and gonorrhea in men. To definitely answer the remaining questions about condom effectiveness for preventing STD infections will require well-designed and ethically sound clinical studies.