Nonoxynol-9 for preventing vaginal acquisition of HIV infection by women from men

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Nonoxynol-9 does not protect women against acquisition of HIV infection through sex. In fact, there is evidence that nonoxynol-9 may cause harm by increasing the frequency of genital lesions. Based on available evidence nonoxynol-9 cannot be recommended for use in HIV/AIDS prevention programmes.

RHL Commentary by Siegfried N

1. EVIDENCE SUMMARY

This review—based on five randomized controlled trials— found that nonoxynol-9, a vaginal microbicide, does not prevent women from acquiring HIV vaginally from men. The risk of occurrence of genital lesions, such as ulcers, was higher (relative risk [RR]: 1.18; 95% confidence interval [CI]: 1.02–1.36) in women using nonoxynol-9, being marginally statistically significant.

The authors conducted an extensive search of a wide variety of appropriate databases. They attempted to include both published and unpublished studies by searching conference databases and contacting researchers and funding agencies working in the field. However, the reporting of results of the search could be improved by stating the number of abstracts retrieved and the degree of overlap between the databases. The process of data extraction seems to have been conducted rigorously in a bid to reduce errors.

2. RELEVANCE TO UNDER-RESOURCED SETTINGS

2.1. Magnitude of the problem

The latest UNAIDS epidemic update report estimates that globally 42 million people are currently living with HIV/AIDS (1). Half of these are women and 3.2 million are children less than 15 years old. During 2002, an estimated 5 million people became newly infected with HIV and 3.1 million people died of AIDS. Sub-Saharan Africa is by far the worst affected region, with 29.4 million people living with HIV/AIDS, and 2.4 million Africans dying of HIV last year.

In the four southern African countries-Botswana, Lesotho, Swaziland and Zimbabwe-national adult prevalence rates exceed 30% (1). In South Africa, 25% of pregnant women attending public health clinics for antenatal care are infected with HIV (2). Currently, HIV/AIDS accounts for 38% of Years of Life Lost and is the major contributor to Disability-adjusted Life Years in South African men and women (3).
Given the considerable social inequalities in health in South Africa, access to health care is poor in many regions. Without intervention, the projected impact of HIV/AIDS is estimated to double the burden of premature mortality by the year 2010 (3). The South African National Department of Health has recently announced a phased programme of prevention and treatment activities, including the provision of anti-retroviral treatment to people living with HIV (4). The provision of anti-retrovirals to pregnant women to reduce mother-to-child transmission of HIV/AIDS will continue as part of this programme.

2.2. Applicability of results

Four of the five included trials were conducted in female sex workers working in areas of high HIV prevalence and therefore at high risk of acquiring HIV. However, there is no apparent reason why the findings of these trials would not apply to women who engage in sexual intercourse less frequently than sex workers.

The reviewers warn that it would be unwise to generalize the results of potential harm-i.e. higher risk of lesions-to risk women who use nonoxynol-9 occasionally as a spermicide for contraceptive purposes, rather than for protection against HIV. The harmful effect of nonoxynol-9 on genital ulcers is only marginally statistically significant and the lesions mostly occur on the vulva, which is away from the area where nonoxynol-9 is generally used for contraception.

All of the trials were conducted in developing countries, which adds weight to the applicability of these results in under-resourced settings.

2.3 Implementation of the intervention

Based on the current evidence nonoxynol-9 use cannot be promoted for HIV/AIDS prevention programmes in any country.

To implement an intervention involving the promotion of a microbicide for the prevention of HIV health care workers and planners will need to consider issues of safety, acceptability and ease of use, cost and impact on sexual function and enjoyment.

3. RESEARCH

Despite the finding that nonoxynol-9 is not effective in preventing the acquisition of HIV, primary research on other microbicides in under-resourced settings will continue to be an important focus of HIV prevention research. Given that an effective microbicide can offer women choice and greater control over their risk, further evaluation of other microbicides is warranted. If newer microbicides are shown to be effective in preventing HIV transmission, it will be essential to conduct feasibility studies not only among female sex workers, but also other sexually active women.

In South Africa, the HIV Prevention Research Unit of the Medical Research Council in partnership with the National Institutes of Health (USA) is conducting a microbicide trial and feasibility studies of microbicide use among sex workers and their steady male partners and clients (5). An additional study in partnership with the Population Council is investigating the acceptability of the vaginal gel, Carraguarda, among HIV-infected men and women. Carraguarda thickens once placed in the vagina and inhibits viral entry; it also has anti-microbial properties (5).

Should results from these trials indicate a protective effect of microbicide use, the impact on the HIV/AIDS pandemic could be enormous. Research into more such women-controlled strategies is to be encouraged.

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References


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