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China needs safe and effective microbicides for preventing the sexual transmission of HIV

Shibo Jiang^{*}, Shuwen Liu, and Alan Stone

The Antiviral Research Center, the Southern Medical University, Guangzhou, China (SJ, SL); The Lindsley F Kimball Research Institute, the New York Blood Center, New York, USA (SJ); and independent consultant, London, UK (AS)

“Time to Deliver” was the theme of the XVI International AIDS Conference held in Toronto, Canada, from Aug 13–18, 2006. This theme highlights the urgent need to bring effective anti-HIV therapeutics and prophylactics (including vaccines and microbicides) to the people who need them around the world.

Microbicides—anti-infective substances formulated as gels, foams, creams, suppositories, impregnated sponges, or intravaginal rings—will be a key tool for preventing the sexual transmission of HIV and other infectious pathogens.^{1,2} They could undoubtedly play a major role in combating the spread of HIV in China—a country with a population of more than 1.3 billion, with about 650 000 people living with HIV.³ However, the development of microbicides is not yet receiving adequate attention in China. This may be partly because, initially, most HIV-positive individuals in China were infected not through sex, but through injecting drug use, and through contaminated equipment used in commercial blood and plasma collection. More recently, with the implementation of strict measures to control blood safety, the infection rate through the latter pathway has decreased substantially. In contrast, HIV transmission through unprotected sex has risen rapidly.⁴

The urgent need for microbicides to limit the sexual spread of HIV in China is clear. The potential market for them is extensive, a fact already appreciated by the commercial (non-government) pharmaceutical sector in China. Several vaginal contraceptive gels containing antimicrobial agents are already on the market there. The main active ingredients in these products are octoxynol-9, nonoxynol-9, benzalkonium chloride, or various combinations of them. All of these substances are surfactants that disrupt lipid membranes, including those of spermatozoa, and are the active ingredients of vaginal contraceptives available in many countries. They also show activity against HIV in vitro, although there is no reliable evidence of a protective benefit from clinical studies. Despite this, some of these products are being marketed in China not only as spermicides but also as microbicides, with claims that users of the product will be protected from HIV infection. Such claims are as yet unsubstantiated. They are based solely on laboratory data, and clinical trials to put them to the test have not been undertaken. Furthermore, some surfactants can be toxic to the vaginal mucosa.^{5–7} A clinical trial to evaluate the protective effectiveness of nonoxynol-9 showed that it not only failed to reduce HIV risk but actually increased it, probably as a result of the penetrating lesions it caused in the mucosa.⁶ Until their safety and efficacy have been proven, this situation could pose considerable risks to sexually active people. Even as contraceptives, surfactant products need to be accompanied by a warning that they should not be used by women at high risk of HIV infection or who have multiple daily acts of intercourse, as WHO has recommended for nonoxynol-9-based contraceptives.⁷

It should be noted that even “safe” products that do not injure the vaginal mucosa could still have a negative public-health impact if users engage in riskier sex because they are led to believe—in the absence of proof—that they protect against HIV.

In view of China’s large population and the increasing numbers at risk from the growing heterosexual HIV epidemic there, the benefits of effective, safe, and affordable microbicides could be very substantial. On the same grounds, there is also considerable potential for harm if the use of untested products becomes widespread.

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