Have we ignored a very simple procedure that could significantly reduce the risk of sexual transmission of HIV to men from women?

May 8, 2012 By Joseph Sonnabend, MD

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In 2010 there was a great deal of outraged comment about the US government's award of $823,000 to an HIV related project in Africa. Specifically, the taxpayer dollars were to be used to teach uncircumcised African men how to wash their genitals after having sex. The grant states; "If we find that men are able to practice consistent washing practices after sex, we will plan to test whether this might protect men from becoming HIV infected in a later study."

The reasoning behind the project was based on the assumption that the reported protective effect of male circumcision was due to improved genital hygiene. This is in the project description:

"The protective effect of male circumcision on HIV acquisition may be due to improved genital hygiene. We propose to evaluate the feasibility of a post-coital genital hygiene study among men unwilling to be circumcised in Orange Farm, South Africa. Men in high prevalence settings could potentially benefit from improved genital hygiene if this intervention proved to be efficacious in reducing HIV acquisition risk" Genital hygiene was to be improved by asking men to wash their penis after sex.

Widespread criticism of such a use of public funds might have missed the main problem. As it turns out, not washing immediately after sex may actually have a significant protective effective for men at risk from heterosexual intercourse - including both circumcised and uncircumcised men.

This was noted in two randomized studies of male circumcision to prevent HIV infection in the Rakai region of Uganda in 2003-2007. Although the effect of washing on HIV acquisition received some media attention at the time its relevance to HIV prevention remained generally unnoticed. It apparently also remained unnoticed or considered to be of no consequence to the applicants as well as the funders of the $823,000 grant noted above.

Combining results from these two trials, Tobian and colleagues in an article in AIDS in 2009 (1) report information on risks for 105 HIV seroconversions in 6,396 initially HIV-negative men observed during 9,604 person years (PY) of follow-up. Half the men were circumcised for the trial and half remained uncircumcised.

These 105 HIV seroconversions represent 1.09 infections per 100 PY.

Among the questions that trial participants were asked in attempting to define risks for HIV infection was whether or not they washed their genitals after sex.

Among men who did so there were 1.35 infections per 100PY compared to only 0.38 infections per 100PY among men who did not wash their genitals. The adjusted relative risk for washing vs. not washing was 3.04 (95% confidence interval: 1.11-8.33; P = 0.031).

The authors make the following comment in their discussion,

"*The finding that HIV incidence was increased with washing genitals after sexual intercourse is counterintuitive, but supports previous finding that washing the penis within 10 min of sexual intercourse increases the risk of HIV acquisition among uncircumcised men. The increased HIV acquisition with penile washing may be due to the removal of acidic vaginal secretions or the addition of water with a neutral pH may* assist *HIV survival and infectivity*".

The "previous finding" referred to is an earlier report by Makumbi and colleagues (2) in 2007, who interviewed 2552 uncircumcised men enrolled in the control arm of a randomized trial of circumcision for HIV prevention in the Rakai region of Uganda (these men are included in the data reported by Tobian and colleagues in 2009). Some of the information reported by Makumbi and colleagues is shown in the last four slides in this presentation prepared by i-Base, UK.

This is one of the slides showing that there were 2.32 HIV infections per 100PY among men who washed their penis within 3 minutes of intercourse, but only 0.39 infections per 100PY among men who waited for 10 minutes or longer before washing.

If we were to express the efficacy of delayed washing in the same way that the results of PrEP trials were reported, that is as relative risk reductions, this would mean that not washing immediately, but waiting for at least 10 minutes after intercourse before washing can reduce the risk of infection by 83%. Compare this to the 44% efficacy of Truvada in the iPrEx trial, the 39 % efficacy of tenofovir gel in reducing the risk of infection in women in the Caprisa 004 trial, and the 38-66% efficacy reported for circumcision over 24 months.

Genital washing after sex may be quite common in parts of Africa. A study in Nairobi in 2004 found that a majority of men washed their genitals after sex. Here is a link to a table in the report; 60% of men reported always washing their genitals after sex.

We have had evidence that this practice may contribute to the risk of HIV infection in men since 2007. We have to wonder if the many questions this raises have been addressed, or even considered.

Could the practice of immediate post-coital genital washing contribute to the risk of sexual transmission of HIV to men?

Are there regional variations in this practice, and could this be related to HIV prevalence to some

extent?

Should there be a debate on the evidence by experts, with recommendations for further research - such as adding questions to on-going or proposed studies, laboratory testing of HIV viability in semen and vaginal fluids at body temperature or conducting a trial to nail down the risk of immediate washing, or in other words, the protective effect of delayed washing?

If immediate washing increases the risk of infection does this not raise the question of the extent to which infection occurs after withdrawal?

Considering how innocuous the intervention is do we have sufficient evidence now to advise African men at risk of HIV through heterosexual contact not to clean their penis for at least 10 minutes after sex? Should a dry cloth without water or soap be used?

The study teams for these trials have more information on post-coital penis cleaning that they have not reported. We know that for uncircumcised men, wiping was safer than washing, and waiting at least 10 minutes to clean significantly reduced risk for HIV (see the last several slides in this reference. But we don't have similar details for circumcised men. What information has been collected but not reported

We have evidence that a common practice, at least in certain regions can substantially increase the risk of HIV infection in men through heterosexual intercourse. Considerable attention has been given to newer prevention methods in the past few years, notably pre - exposure prophylaxis and male circumcision, but almost none to the simplest of procedures that may be even more effective in preventing the sexual transmission of HIV.

Many other questions and concerns will no doubt arise as more people look at the evidence, and figure out what to do about it. Lives are at stake. Scientific competence and integrity are also at stake - researchers have overlooked and/or incompletely reported information that could save lives.

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1. Tobian AAR, Ssempijja V, Kigozi G, et al. Incident HIV and herpes simplex virus type 2 infection among men in Rakai, Uganda. AIDS 2009; 23: 1589-1594.

2. Makumbi FE, Gray RH, Wawer, M, et al. Male post-coital penile cleansing and the risk of HIV-acquisition in rural Rakai district, Uganda. Fourth International AIDS Society Conference on HIV Pathogenesis, Treatment and Prevention, abstract WEAC1LB, Sydney, 2007. Available at:

http://www.ias2007.org/Default.aspx?pageId=11&abstractId=200705536

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