Original Article

Knowledge of HIV Prevention and Willingness to Collaborate in Vaginal Microbicides Trials-Survey of Nigerian Gynecologists

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ABSTRACT

BACKGROUND: Gynecologists being the primary care physicians and advocates for women sexual and reproductive health are critical in delivering messages on effective intervention to prevent heterosexual HIV transmission. Their knowledge and opinions on the effectiveness of HIV prevention technologies may influence the acceptance and use of these technologies among women at risk.

METHODS: A cross sectional survey was self-administered to Nigerian gynecologist attending an Annual Scientific conference; "Kanon Dabo" between November 17 and 21, 2009, in Kano, Nigeria. Their opinions on various HIV prevention strategies as well as their willingness to collaborate on vaginal microbicides trials were assessed on a Likert scale. The mean scores of the responses were tested using student's T-test. Statistical analyses were done with STATA version 11, College Station, Texas, USA.

RESULTS: Of the 100 questionnaires distributed to the participants at the conference, we had a survey response rate of 74.0%. The mean age of the participants was 42.38 ± 6.67 years with range 30-58 years. Male participants constituted 84.9%, and Female participants 15.1%.Twenty five percent (25%) of the surveyed participants were aware of vaginal microbicides, and only 3% correctly mentioned an example of a vaginal microbicide for HIV prevention. The willingness of the participants to collaborate on vaginal microbicides trials was not significantly related to their knowledge on vaginal microbicides (p= 0.475). Conclusion: We concluded that the current knowledge of Nigerian gynecologist on vaginal microbicides is poor. Efforts to create awareness among these women advocates on recent HIV prevention technology, particularly, vaginal microbicides are required.

KEY WORDS: Knowledge, HIV prevention, vaginal microbicides, Gynecologist, Nigeria

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INTRODUCTION:

According to recent United Nations AIDS (UNAIDS) estimates, in 2008, 31.3 million adults were living with HIV and approximately 2.3 million adult newly infected with the virus[1]. Women within the reproductive age constitute almost half of these infections acquired largely through heterosexual transmission.

In Nigeria, heterosexual transmission is responsible for over 80% of the HIV epidemic[2]. Women are more vulnerable to heterosexual transmission due to biological and social reasons. Because of limited economic options and gender inequality, many women cannot reliably negotiate sexual encounters, leaving them vulnerable to unwanted pregnancy and sexually transmitted infections, including HIV. Indeed, the UNAIDS outcome framework 2009-2011 recognizes prevention of sexual transmission of HIV as a priority area[1].

Strategies to combat sexual transmission of HIV include behavioral interventions such as abstinence, being faithful to one uninfected sexual partner and consistent and correct use of condoms during sexual intercourse[2]. In recent years, investigation has shown that the rate of sexual transmission depends on cofactors such as circumcision status, presence of sexually transmitted infections, particularly genital ulcer disease, and also the phase of the disease[3]. High viral load in the serum during the acute infection period increases the probability of male-to-female heterosexual transmission by up to eight to ten fold[4]. A study among Ugandan serodiscordant couples found the rate of HIV-1 sexual transmission per coital act within 2.5 months after seroconversion of the index partner to be almost 1%[5]. Universal screening and early treatment with highly active antiretroviral therapy (HAART) has thus been postulated as an important HIV prevention strategy that has the potential of "eliminating" HIV transmission at the population level in the nearest future[6-7]. Male circumcision is one of the recent strategies that have shown consistent results reducing the efficiency of sexual transmission of HIV. Investigations have also demonstrated biological plausibility of this intervention in HIV prevention. Indeed, three recent randomized clinical trials in sub-Saharan Africa have shown that male circumcision decreases the risk of female-to-male HIV transmission by 50-76%[8-10].

Even though women are by far more vulnerable to heterosexual HIV transmission, most of the proven effective HIV prevention technologies are not within the control of women and offers more protection to their male partners. Similarly, tremendous efforts have been invested in finding an effective HIV vaccine, but the results so far have shown little promise. Since an effective

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HIV vaccine for clinical use is likely to be years away, vaginal microbicides formulations applied vaginally are receiving increasing attention as a valuable tool under the control of women for HIV prevention. Their effectiveness is still being investigated under well controlled clinical trials in settings with high HIV burden in Africa.

Gynecologists being the primary care physicians and advocates for women sexual and reproductive health and rights are critical stakeholders in recommending the use of available new HIV prevention tools. Their knowledge and opinions on the effectiveness of new HIV prevention technologies is therefore crucial in preventing heterosexual HIV transmission among women in Nigeria. We therefore conducted a survey of Nigerian gynecologists to assess their knowledge and opinions on the effectiveness of various HIV prevention strategies and also to assess their willingness to collaborate in HIV prevention trials. Specifically, we were interested in assessing their knowledge on vaginal microbicides and willingness to collaborate in vaginal microbicides prevention trials. We hypothesized that the knowledge of Nigerian Gynecologists on Vaginal microbicides is significantly related to their willingness to collaborate in vaginal microbicides trials.

METHODOLOGY

Study design and setting

This was a cross sectional survey, self administered to Nigerian gynecologists who participated at the 43rd Annual Scientific conference of the Society of Gynecology and Obstetrics of Nigeria (SOGON), "Kanon-Dabo", Kano State, Nigeria, West Africa. It was a "one-time point" assessment using questionnaires distributed to registered participants at the opening ceremony of the conference. The meeting lasted 5 days, November 17 to 21, 2009.

Sampling technique

A non-probability, convenience sampling technique was used to select participants willing to respond to the survey questions. The survey questionnaire was pilot tested among senior Registrars on training in general obstetrics and gynecology at the Jos University Teaching Hospital, Jos, Nigeria. About 220 Gynecologist registered for the conference and constitutes the source population for the survey. One hundred (100) survey questionnaires with a brief introductory note were distributed to the registered participants at the opening ceremony. The participants were asked to respond to relevant sections of the questionnaire and return their responses to the SOGON local organizing committee before departure from the conference.

Statistical analysis

The opinions of Gynecologists on various HIV prevention strategies as well as their willingness to collaborate on vaginal Microbicides Trials were assessed on a Likert scale. A response score of 4 and 1 were given for strong and weak opinion respectively on the effectiveness of various HIV prevention strategies. Relevant reverse coding were applicable was done before calculating mean scores. The mean scores of the responses were tested using student's T-test with statistical significance set at P-value <0.05. To determine differences in knowledge base on level of specialization, analysis of variance (ANOVA) test with Bonferroni's pairwise comparison was done. Homogeneity of the three comparison groups (Group 1=Registrar, Group 2=Senior Registrar and Group 3=Consultants) was assessed with Bartlett's test for equality of variance (a p value >0.05 suggest equal variance among the groups). All statistical analyses were done with STATA version 11, College Station, Texas, USA.

RESULTS

Out of a total of 100 registered participants who agreed to respond to the survey questionnaires, eighty one (81) questionnaires were returned to the researchers (81%). Seventy four (74) of the returned questionnaires had satisfactory responses for analysis (74/81=91.35%). Seven (7) of the returned questionnaires were either not completed or had invalid responses. Our survey response rate was therefore 73.99% (0.81*0.9135). The mean age of the participants was 42.38 ± 6.67 years with range 30-58 years. Male participants (62) constituted 84.9% (95% CI 76.5%-93.3%), and Female participants (11) 15.1% (95% CI 6.7% -23.5%).Twenty five percent (25%) of the surveyed participants were aware of vaginal microbicides, and of the 25% that had knowledge, only 3% correctly mentioned an example of a vaginal microbicide for HIV prevention. ANOVA test showed a significant difference in knowledge of microbicides among the 3 groups of specialization ($F=4.25$, $p=0.018$).

Bonferroni pairwise comparison test showed a significant difference in knowledge of vaginal microbicide between Registrars and Senior Registrars ($p=0.016$), but no significant difference in knowledge of vaginal microbicide between Senior Registrars and consultants ($p=0.552$). Bartllet's test for equality of variance confirm the assumption of homogeneity among the 3 groups ($p=0.665$). The willingness of the participants to collaborate on vaginal microbicides trials was not significantly related to their knowledge on vaginal microbicides (mean score 2.48 versus 2.35; $p=0.475$).

Table 1. Baseline mean scores and proportions expressing strong opinions on the effectiveness of various HIV prevention technologies among Nigerian Gynecologists

HIV prevention strategy	Mean score on effectiveness	Std. deviation	Proportion expressing strong opinion (%)	95% CI on opinion expressed (%)
Sexual Abstinence before marriage	3.51*	1.0	74.6	64.3-85.0
Use of condoms	3.44*	0.94	66.2	54.9-77.5
Male circumcision	3.02*	1.18	50.7	38.8-62.6
Female circumcision	1.09	0.41	4.0	0.57-9.0
Screening and treatment of STIs	3.71*	0.75	81.7	72.4-90.9
Screening for HIV and treatment with ARVs	3.36*	0.97	60.6	49.0-72.2
Use of vaginal microbicides	2.19	1.04	12.7	4.7-20.6

*There was significantly a greater mean score on the effectiveness of other HIV prevention technologies (except for Female circumcision) compare to vaginal microbicides (p-value <0.001). A lower score denotes a weak opinion and a higher score a stronger opinion.

Table 2**. Knowledge of vaginal microbicides and mean score on opinions of Nigerian Gynecologist on the effectiveness of various HIV prevention technologies N=75**

HIV prevention strategy	Knowledge of vaginal Microbicides (Yes)	Knowledge of vaginal Microbicides (No)	P-value (T-test)
Sexual Abstinence before marriage	3.85	3.37	0.059
Use of condoms	3.66	3.35	0.205
Male circumcision	3.28	2.92	0.240
Female circumcision	1.09	1.09	0.980
Screening and treatment of STIs	3.95	3.61	0.076
Screening for HIV and treatment with ARVs	3.47	3.31	0.509
Use of vaginal microbicides	2.47	2.07	0.137

Mean scored2 (weak opinion on effectiveness), Mean score>2(Strong opinion on effectiveness)

DISCUSSION

Our survey results revealed that the knowledge of Nigerian Gynecologists on Vaginal microbicides is presently poor. Only 3% of those who said they were aware of vaginal microbicides could correctly name a product for HIV prevention. The poor knowledge of vaginal microbicides among Nigerian gynecologists could be related to insufficient campaign on vaginal microbicides among this group of professionals that are primary care providers and advocates for women sexual health.

These findings have implications on acceptability and possible use of microbicide products when available in the nearest future in Nigeria. Indeed, studies in Africa have suggested that knowledge and acceptability of vaginal microbicides could significantly influence clients' uptake and use of microbicides products in both positive and negative ways [11]. Lessons from studies related to acceptability of contraception and other family planning products are critical in understanding the role of health care providers in influencing clients' perception, acceptability and use of potential microbicides formulations for HIV prevention. Numerous studies have demonstrated that clients are more likely to choose, use and continue contraceptive methods recommended or preferred by their healthcare providers[12]. Indeed, providers' lack of knowledge or skill about a product can undermine uptake and hinder prevention of HIV with these products[13]. This has been demonstrated with studies on emergency contraception in Nigeria where providers could not recommend the products to their clients for lack of information on the product[14]. Similarly, in the area of HIV prevention, gynecologists being the Primary care providers for women are not likely to recommend vaginal microbicides for HIV prevention if they are not knowledgeable enough on the products. The results of this survey therefore suggests the need to raise awareness among women health care professionals on new HIV prevention technologies as a strategy for promoting recommendation of the final products if proven effective in well-controlled clinical trial settings.

Studies have shown that misinformation or incomplete information may lead providers to overemphasize the negative aspects of sexual and reproductive health technologies[15]. Our survey results showed that 81.7% of Nigerian Gynecologist expressed strong opinions for screening and treatment of sexually transmissible infections as an effective HIV prevention technology compare to only 12.7% expressing strong opinion on the effectiveness of vaginal microbicides for HIV prevention. This difference was statistically significant, and could be explained by the sound knowledge that most gynecologists have as part of their professional training in screening and treatment of reproductive tract infections, including sexually transmitted infections (STIs). STIs are known causative agents for common gynecological morbidities including infertility. Most gynecologists are also well-knowledgeable in their training on the role of STIs and other reproductive tract pathogens in paving ways for HIV entry during sexual intercourse. It is therefore not surprising that majority of the gynecologists who participated in this survey expressed strong opinions on the effectiveness of screening and treatment of STIs for HIV prevention. Nevertheless, their willingness to collaborate in vaginal microbicide trials, confidence on vaginal microbicides as well as their readiness to recommend effective vaginal microbicide product was similar whether they had knowledge on vaginal microbicides or not.

In spite of the well established effectiveness of male circumcision in preventing male-to-female HIV transmission[8-10], only 50% of the gynecologists surveyed expressed a strong opinion on its effectiveness for HIV prevention. This may be related to the general aversion of most gynecologists towards female circumcision as seen in this survey; only 4.7% expressed strong opinions in favor of female circumcision as an effective HIV prevention tool. Majority of the surveyed participants however, expressed strong opinions on the effectiveness of abstinence, use of antiretroviral as well as condoms as effective HIV prevention strategies. Indeed, a recent study has shown the tremendous effectiveness of antiretroviral treatment in reducing heterosexual HIV transmission by as much as 96%[16].

This study has limited generalizability since we surveyed only a sample of Nigerian gynecologists who participated at the annual general meeting; a more systematic approach of posting the survey through "SurveyMonkey" to Nigerian gynecologist using the SOGON list of members as a sample frame may give a better response rate and add more strengths and external validity to our findings. We also did not consider the sub-specialty of the participants. It is expected that gynecologists working in the field of HIV prevention should generally be more knowledgeable on HIV prevention strategies compared to those in sub-specialties unrelated to HIV medicine. However, the current methodology adopted provides a useful pilot data and baseline for future survey among this

professional group. The response rate of 74% is good and we can conclude that the findings gives a fair representation of the current knowledge of most Nigerian gynecologists on HIV prevention strategies in general and vaginal microbicides in particular.

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