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Achieving Pregnancy Safely: Perspectives on Timed Vaginal Insemination among HIV-Serodiscordant Couples and their Healthcare Providers in Kisumu, Kenya

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Abstract

In female-positive HIV-serodiscordant couples desiring children, home timed vaginal insemination of semen during the fertile period along with consistent condom use may reduce the risk of HIV transmission when the man is HIV-uninfected. In sub-Saharan Africa, up to 45% of HIV-infected women desire to have more children. HIV viral load assessment is not routinely available in low-resource countries for monitoring adherence and response to antiretroviral therapy. Therefore, in these settings, timed unprotected intercourse without assurance of HIV viral suppression may pose unnecessary risks. Timed vaginal insemination, a simple and affordable intervention, can be considered an adjunct method and option of safer conception for HIV prevention with treatment of the HIV-infected partner and/or pre-exposure prophylaxis. We conducted five mixed and single sex focus group discussions comprised of 33 HIV-serodiscordant couples and healthcare providers in the Nyanza region of Kenya to assess the acceptability and feasibility of timed vaginal insemination as a safer method of conception. The transcribed data was analyzed using a grounded theory approach. We found that educating and counseling HIV-serodiscordant couples on timed vaginal insemination could make it an acceptable and feasible safer conception method when associated with frequent communication and home visits by healthcare providers. The findings of this study indicate that implementation studies that integrate training and counseling of HIV-serodiscordant couples and healthcare providers on timed vaginal insemination combined with consistent condom use are needed. Acknowledging and supporting the reproductive choice and needs of female positive, male negative HIV-serodiscordant couples who desire children should also include the use of assisted reproductive services at the same time as pharmaceutical options that prevent sexual HIV transmission.

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Keywords

HIV-serodiscordant couples; pregnancy; safer conception; vaginal insemination; assisted reproduction; condom use

INTRODUCTION

In African culture, reproduction is linked to individual identity, worth, and social status (Ujiji et al., 2010; Cooper et al., 2007). Successful antiretroviral therapy (ART) has prompted HIV-infected individuals to pursue fulfillment of childbearing desires. Heterosexual HIV-sero discordant couples may account for at least 50% of new HIV infections in Kenya, and transmission nearly doubles in partnerships where pregnancy occurs (Guthrie et al., 2007; Dunkle et al., 2008; Matthews et al., 2010; Coburn et al., 2011; Brubaker et al., 2011). HIV-serodiscordant couples desiring children knowingly risk HIV transmission with unprotected intercourse. Risk reduction strategies to decrease or eliminate unprotected intercourse for conception should represent a critical target for HIV prevention initiatives.

Timed vaginal insemination (TVI) during the fertile period is a simple, low-cost intervention requiring a syringe and a water-based lubricated condom. However, socio-cultural perceptions concerning the use of assisted reproductive methods for achieving pregnancy outside of unprotected penile-vaginal penetration may not be acceptable from a cultural or a personal perspective (Horbst, 2012). Prior to initiating an observational study evaluating acceptability and feasibility of TVI (ClinicalTrials.gov identifier: NCT01468753), we conducted formative research in Kisumu, Kenya to assess how HIV-serodiscordant couples and healthcare providers would approach TVI.

METHODS

Semi-structured focus group discussions (FGDs) were conducted from November 2011 through February 2012 at the Family AIDS Care & Education Services (FACES)-Lumumba Health Centre (LHC) in the Nyanza region, which has the highest HIV prevalence in Kenya at approximately 15% (NASCOP & MOH, Kenya, 2012). Healthcare providers and HIV-serodiscordant couples were recruited from the FACES-LHC, an ongoing clinical trial evaluating the use of PrEP in HIV-serodiscordant couples (NCT00557245), and established couples support groups at LHC. FGD participants were ≥ 18 years and in a stable HIV-serodiscordant relationship with preference for partnerships with an HIV-infected female. FGDs were semi-structured around four themes: childbearing desires, sexual decision-making and HIV risk perception, condom use, and preconception counseling.

Mixed and single-sex FGDs were conducted in Dhluo; healthcare providers' FGD were conducted in English. A trained HIV couples counselor and behavioral sociologist, fluent in Dhluo and English, moderated the FGDs. All sessions were audio taped, transcribed, and translated into English. A grounded theory approach was used to analyze the transcribed discussions. Two investigators independently identified emergent themes and subcategories that were defined with a codebook after consensus between investigators was reached.

Ethical approval was granted by the University of California, San Francisco Committee on Human Research and the Kenya Medical Research Institute Ethical Review Committee. FGD participants provided written informed consent.

RESULTS

Child Desires

All HIV-serodiscordant participants expressed a desire for pregnancy, with majority ideally desiring two to four children. Less than half of men (n=4) and women (n=4) FGD participants reported discussing the desire to have a child with their partner. Women (n=6) were more likely to discuss their desire for a child with their healthcare providers compared to men (n=3). Couples were more likely to desire additional children if they had not achieved their ideal family size, experienced the death of a child, or felt social pressure to produce a male child.

Sexual Decision-Making and Risk Perception

The majority of FGD participants acknowledged the risk of HIV transmission with unprotected sex but this did not translate into consistent condom use. Several of the HIV-uninfected men disclosed that they had been having unprotected sex for years prior to learning of her diagnosis; and as infection had not occurred the men presumed future HIV transmission was unlikely.

Condom Use

During the FGDs, 8% of men and 15% of women reported using condoms consistently. Women expressed a desire for consistent condom use despite pressure from their partners not to use condoms. Men stated their challenges with condom use; e.g. loss of spontaneity, erectile dysfunction, and reduced sexual pleasure. Due to their insistence on condom use, women reported blame for their partners' erectile dysfunction; additionally, religious explanations were occasionally raised but a desire to become pregnant was presented as a major barrier to condom use.

Perception of Clients' Knowledge of Safe Methods of Achieving Pregnancy

Healthcare providers acknowledged that fear of HIV disclosure, reluctance to use condoms, and the desire for children all played a role in risk-engaging behaviors amongst their HIV-serodiscordant clients. Providers admitted that HIV-serodiscordant couples were interested in learning about safer methods of conception but couples did not possess knowledge on how to "*safely get pregnant*" and were unaware of the "alternatives they have; the bottom line is having sex without a condom."

Preconception Counseling

HIV-serodiscordant couples expressed an interest in obtaining information on safer conception but "based on the information [they were] given...when we need a baby then we have to do it without a condom." Some couples felt they were comfortable discussing childbearing desires with their healthcare providers, others commented that providers "*do*

not encourage [pregnancy]" in HIV-infected women and "they usually say that anytime you get pregnant while you have HIV, your immune system goes down further."

The providers stated that standardized preconception counseling messages are not routinely offered to HIV-serodiscordant couples; and the following challenges exist: time constraints, a large client load, and absence of the partner at clinic visits or counseling sessions. When offered, preconception counseling placed an emphasis on optimizing the couples' health status, maintaining an adequate CD4 count, achieving viral suppression in the HIV-infected partner, screening and treatment of sexually transmitted infections, and timed unprotected intercourse. Providers recommended limiting sexual intercourse to "*safe days*" (i.e. fertile period) as the "*only time they can have unprotected sex*" while emphasizing condom use with all other sexual encounters. However, healthcare providers admitted unfamiliarity with teaching or identifying a woman's fertile period.

Perspectives on Vaginal Insemination—The healthcare providers were optimistic that TVI could be acceptable "because it's something that is done at home and [they] don't have to bring in the semen." TVI may enhance engagement of the HIV-uninfected partner because they "will feel more protected so [they are] going to cooperate and give more support to the positive partner." Providers emphasized that educating HIV-serodiscordant couples on the fertile period and the TVI procedures would be integral to its perceived acceptability and feasibility.

The ease of performing the TVI procedures coupled with its decreased risk of sexual HIV transmission were promising factors among HIV-serodiscordant couples. All couples expressed that TVI "can be good because it [would] prevent [their] partner from HIV infection" and that the procedures "*may not be very difficult*" if "it helps protect your partner from getting HIV infection."

Perceived Challenges/Barriers to Timed Vaginal Insemination Procedures—Healthcare providers and HIV-serodiscordant couples were divided on who should perform the TVI procedures owing to the expected socio-cultural roles men should have in sexual intercourse. Ultimately, each couple should be allowed to decide who would perform the insemination. Couples had additional concerns including e.g. lack of privacy in the home, discomfort with seeing each other naked, and genital touching in an act not normally associated with sexual intercourse.

Overcoming the Barriers

Healthcare providers were optimistic that the perceived challenges with the TVI procedures could be overcome with education and "*highlighting the [couple's] motivating factor*" to safely become pregnant while preventing sexual HIV transmission. Providers suggested that frequent home and clinical visits for couples employing the TVI procedures may be required.

DISCUSSION

Our study is the first to report the perceptions of HIV-serodiscordant couples and their healthcare providers on TVI as a reproductive option. HIV-serodiscordant couples expressed a need for options that provide a decreased risk of sexual HIV transmission with conception, to freely discuss their childbearing desires, and to receive support from their healthcare providers (Wagner et al., 2012). Healthcare providers do not routinely explore the reproductive intentions of HIV-affected individuals i.e. “are you interested in having children?” and have limited safer conception options to offer. Timed unprotected intercourse as a safer method of conception requires: 1) routine HIV viral load and genotype assessment in the infected partner; 2) adherence to treatment; and 3) subsequent HIV viral load suppression; none of which is routinely available in low-resource environments. Therefore, alternative reproductive options should be evaluated and implemented to assist HIV-serodiscordant couples in safer conception.

The acceptability and feasibility of TVI rests on the provision of fertility education, counseling, and support services by trained healthcare providers. TVI may also improve condom use amongst ♀+/♂-HIV-serodiscordant couples. In Kenya, 11% of women and 43% of men report consistent condom use (NASCOP & MOH, Kenya, 2012) and condom use may be improved with the provision of safer conception services.

Our analysis may not be generalizable to high-resource environments or couples with underlying sub/infertility. The FGDs solicited perspectives on TVI only as a formative component of a subsequent observational study; therefore comparisons to other safer conception methods cannot be extrapolated. Our study participants were recruited from a research rich environment including, a large randomized control trial evaluating use of PrEP in HIV-serodiscordant couples where study participants received education and counseling services on consistent condom use, adherence to PrEP, as well as coping methods for living happily. FGD participants openly shared challenges with consistent condom use suggesting that despite some of their providers’ best efforts, achieving this in couples desiring children may likely only occur if linked to safer methods of conception.

CONCLUSIONS

Our study highlights the need for healthcare provider training and development of a standardized, culturally acceptable preconception counseling within comprehensive HIV and assisted reproductive health services for HIV-serodiscordant couples. Healthcare provider training should place emphasis on creating a non-judgmental environment in which HIV-affected individuals can freely express their fertility desires, challenges to consistent condom use, and options for safer conception. TVI is theoretically acceptable to ♀+/♂-HIV-serodiscordant couples in Kisumu, Kenya. Emphasis on prevention of sexual and perinatal HIV transmission may help couples and their healthcare providers overcome any technical and cultural challenges.

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Table 1A

Focus Group Discussion (FGD) Composition (N=33)

Focus Group Discussion	Participants (n)	Composition (n)
1	Healthcare Providers (8)	Physician (2) Clinical officer (2) Nurse (2) Community health worker (2)
2	MS-HIV-serodiscordant couples (4)	HIV-infected female (2) HIV-uninfected male (2)
3	MS-HIV-serodiscordant couples (6)	HIV-infected female (2) HIV-uninfected female (1) HIV-infected male (1) HIV-uninfected male (2)
4	SS-HIV-infected females (8)	
5	SS-HIV-uninfected males (7)	

MS-mixed sex SS-single sex

Table 1B

HIV-Serodiscordant Couples Demographics

	Mean (years)
Age	33
	Women – 30; Men – 35
Relationship duration prior to diagnosis of index partner	4.8

Table 2

Illustrative Quotes: HIV-Serodiscordant Couples

Themes	Quotes
Child Desires	"I can share with the health provider on our HIV status. At least, I would wish he gives me advice on the method which we can use to have a baby but still prevent me from being infected by this mother." (HIV-uninfected male, MS-FGD) "I would wish the provider shows me a way of getting one baby who is not infected." (HIV-infected female, MS-FGD) "Pressure is a must. Pressure is mostly as a result of the society. You know in a society if one does not bear a son or is childless, there are words which people throw at him. Such things can easily cause pressure." (HIV-uninfected male, MS-FGD)
Sexual Decision Making and Risk Perception	"When we started living with her, I did not take any steps like using condoms or whatever because I had resolved that even if I get infected, let me get it. So there are times when I would use a condom just to prevent pregnancy and such like, but I do not use it to prevent [HIV acquisition]." (HIV-uninfected male, SS-FGD) "A male FGD participant revealed that "fear assailed on me but later on I discovered that even Jesus who never had sex also died. I will also die. Boss, I have been having unprotected sex but never been infected." (HIV-uninfected male, MS-FGD)
Challenges, Explanations Against and Negotiating Condom Use	"...There are circumstances when even your partner feels you should stop using [condoms] because you need a baby. In such a case, she may tell you to do without it [a condom] in order to get another baby, like in a case where you have only one child." (HIV-infected female, MS-FGD) "...When he used to wear a condom he used to lose erection. He used to ask me to allow us [to] have unprotected sex with him once in a while. So during those five years I was taking septrin, I used to allow him to have unprotected sex. But since I started taking ARVs this year I am scared so I don't allow him." (HIV-infected female, SS-FGD) "I noticed that whenever I used the condom, it reduced my potency...I would lose interest and I kept complaining that this thing is spoiling my urge for sex. She also started complaining that I did not want to have sex with her because I perceived she is infected. I then purposed in my heart that if it is death, so be it." (HIV-uninfected male, SS-FGD) "There is a noticeable difference I have experienced when using a condom with my wife. When we first started using it, the sperms could get released half-way [premature ejaculation]." (HIV-uninfected male, SS-FGD) "We had a problem with the use of condoms at first...he tried to wear them but the erection would fail. So he got discouraged from using them...I struggled with him over it...he told me, look at what you have now caused. You force me into it yet [I] have lived with you for almost two years and a half but I haven't got infected...He bothered me a lot but I left him to do without because the erection used to fail for sure...When we went to the support group, [we] got counseled...He learnt...about CD4 and how people contract HIV. When he came back home, I persuaded him to get used to [using condoms]. [Since] then I have noticed that he remembers and uses them just well." (HIV-infected female, SS-FGD) "[My wife] puts it plainly that if I fail to use a condom, she becomes unwell. She therefore insists that I have to use a condom so as to prevent the sperms from getting into her since they make her sick." (HIV-uninfected male, SS-FGD) "...My wife refuses. Ever since we got tested together, we mostly used condoms. She just refuses, tells me that she should not infect me. She asks why I still want to have unprotected sex with her yet I am aware that she is infected...Any time I want sex I must use a condom. Therefore that is what I use otherwise she would decline having sex." (HIV-uninfected male, SS-FGD) "After knowing our status we have been using condoms. Ever since we came and joined the study, we have been using it...Sometimes it is uncontrollable...The body is not easy to control, truly speaking."(HIV-infected male, MS-FGD) "God is against sperms being released in condoms and thrown away [and since] he had been with many women and...never been sick we should have unprotected sex." (HIV-infected female, SS-FGD)
Preconception Counseling	"That discussion is not so easy because you would realize that those who give us medicine are young and at the same time they hurry you up so much, you are being sent here and there until you find no time to talk such matters with them." (HIV-uninfected male, MS-FGD)
Vaginal Insemination	"I said we need to feel free...Therefore the more we will continue using it, the more we will feel free." (HIV-uninfected male, MS-FGD) "I feel it may not be very difficult. It is easy...it helps protect your partner from getting HIV infection." (HIV-uninfected female, MS-FGD) "We may experience difficulty because we are not conversant with a syringe." (HIV-infected female, MS-FGD) "I would prefer him to insert it for me because I may not keenly fix the syringe into the right position as required. He is the one to fix it." (HIV-uninfected female, MS-FGD)
Support Services for Vaginal Insemination Success	"But this requires a lot of education to the women so that they be aware of the time they are most likely to conceive. This is because she may try it but it would be better done when she is capable of conceiving." (HIV-infected female, MS-FGD) "I think if you educate people on it [home VI] that will be good because most people don't know what is happening. There are so many people who want to have healthy children" (HIV-uninfected male, SS-FGD)

MS-Mixed Sex; FGD – Focus Group Discussion; SS – Single Sex

Table 3

Illustrative Quotes – Healthcare Providers

Themes	Quotes
Perception of Clients' Knowledge of Safer Methods of Achieving Pregnancy	"... [For] most of the [couples] it takes them time before they disclose their status to their partner and some of them are really reluctant even to talk about it and then most of them...feel that now they are positive...if they insist on using things like condoms then on matters of conception, their husband will go out and get another wife." (CO, Female) "The couples are aware of the safer prevention methods but they just choose not to use them. From my experience, when you ask a client "how have you become pregnant?" and all the time in the clinic you say you are using prevention methods then they say "we just had unprotected sex" but they know about the prevention methods." (Nurse, Female) "I think they know, the clients know how to prevent themselves from getting HIV but I don't think they know how they can safely get pregnant if they are discordant. They don't know what choices they have; what alternatives they have. (Physician, Male) "I also say yes because we receive so many numbers coming for preconception counselling because they want the babies and they're thinking "how can we get the babies safely?" (Nurse, Female) "Because, ok, they do not know how to go about it. Like they don't know how as in how fast they can conceive. They don't know how long they are not supposed to use the condom. Some of them are given the risks but they still want to go all the way." (CO, Female) "These clients, they are aware [of the risk of sexual HIV transmission] because like for me I think before somebody comes to you asking you for preconception counseling for safer sex methods they already know there is a high risk. There is a high risk so that's why they come for the counseling because most of them they'll tell you "if you are using a condom, how will you ever get a baby? They know." (Nurse, Female)
Providers Views of Challenges to Consistent Condom Use	"Most of them use condoms. This is I think evident because many a times we are told "we're running out of condoms, can we get more supplies? So, automatically they are taking them." (SSD, Male) "Most of the time options are limited especially to the women because they will rely on the man to use the condom. Not them using a condom because most of the time the female condom is not affordable. It is never there...So is the partner willing to use the condom as we are talking about this?"(SSD, Male) "A few clients have asked me 'if you are using the condom all the time, how will you be able to have children?'" (Nurse, Female)
Preconception Counseling	"Usually the clinics are very busy. Most of the time, you concentrate on managing clinical conditions. Even though you'd want to talk to them sometime you think about the patient who is on the queue. Most of the time, in my experience, I talk about it if there is a reason if they prompt it or something they have told me has prompted me to talk about it." (Physician, Male) "So, we tell them on the importance of condoms and we also tell them that it's not that now they are prohibited from getting children. But if they really feel that they want to children they have to come and consult and they will be taken through the whole process." (CO, Female)
Vaginal Insemination	"It's easy or hard depending on the way the instructions [and] procedures are explained to these couples. So, it's feasibility will rely so much on the way the couple receives the information and the way the information is given to them. So if it's explained properly, it will be easy. If it's not explained properly, it won't be easy." (SSD, Male) "People are very different. I think what we can do is give them information on what are the pros of the man doing it and what are the pros of the woman doing it. Let them make the choice on their own." (Physician, Male) "When we explain this to them we bring out what interests them...in this case, it's having a baby." (Male, SSD)
Overcoming the Barriers	"Seeing the couple frequently when they come to the clinic. Finding out how they're doing. Finding out any questions they have. Any difficulties. Helping them sort out the problems they have, if possible. Just answering their questions." (Female, Nurse) "To have a system in place where if at any time they have concerns, then we have a way of responding to their concerns almost as immediately as they arise. The second one is about their ability to come to the study site. [They should be] supported with a transport to and from the study site when they're coming for their appointment date." (Male, SSD)

CO-Clinical Officer; SSD-Social Science Department