THE ASSESSMENT OF AWARENESS, ATTITUDE AND PERCEPTIONS OF STUDENTS ON HIV VACCINE TRIALS AT THE UNIVERSITY OF DAR ES SALAAM, TANZANIA.

F Haraka[1], M Bakari[2]

Abstract

Objective: To assess the awareness, attitude and perceptions on HIV AND AIDS vaccine trials among students at the University of Dar es Salaam, Tanzania
Study design: This was a descriptive cross sectional study
Setting: University of Dar es Salaam, Tanzania
Results: A total of 384 were recruited in the study. Out of these 41.7% reported that HIV vaccine can not prevent the spread of HIV. One hundred and four (26.8%) were of the opinion that an HIV vaccine can cause infection to the person vaccinated. A total of 317 (82.0%) perceived an HIV vaccine as an addition rather than a substitute to other existing preventive measures such as condom use, in the fight against HIV and AIDS. The attitude towards an HIV vaccine trial was positive in 87.5% of the students, but only 19.8% would be willing to participate in a vaccine trial with their current level of information. However, 48.2% would participate if they are better informed.
Conclusion: The perception and attitude of University of Dar es Salaam students towards HIV vaccine trials were generally positive. However misconceptions were common.
Recommendations: The community should be educated more on HIV vaccine trials, and more socio-behavioral studies need to be done among different social groups on HIV vaccine trials.

Introduction

HIV and AIDS is the major pandemic that has affected many people in the world. By the year 2006 the number of HIV and AIDS victims rose to almost 40 millions(1) Africa is a special case where majority of HIV and AIDS victims are found, with Sub Saharan Africa which has 10% of the world's total population being the home of more than 60% of the people living with HIV in the world; about 25.8 million. In the year 2005 approximately 3.2 million people in the region became newly infected while 2.4 million adults and children died of AIDS[1]. This calls for a great deal of various approaches in addressing HIV and AIDS. A lot has been done and still going on as far as prevention is concerned.

Effective vaccination could be employed as one of the primary prevention strategies in combating HIV and AIDS. Indeed the greatest hope in controlling the expanding HIV epidemic is the development of a safe and effective preventive HIV vaccine. However, despite almost twenty years of efforts, the search for an effective vaccine has yet to come up with one, although efforts continue to date. Advances in the understanding of HIV immunopathogenesis and especially the viral immune evasion mechanisms, have provided important insights into HIV vaccine design.(2) HIV vaccine approaches based solely on recombinant monomeric envelope glycoproteins have failed dramatically and have been discarded.

Modern vector technologies with the potential for generating protective cellular immune responses against HIV are undergoing intensive evaluation in clinical trials. Adenoviral vector systems appear to be very promising for this purpose, while the ability of poxvirus-based regimens to elicit potent HIV-specific cellular immune responses in humans is less certain.(2) A number of novel live vector-based approaches are in development. Emphasis is on those vaccines that are in clinical trials or in an advanced stage of preclinical testing. Hence the HIV vaccine field is a very active and challenging one that will continue to push forward the understanding of basic immunology and drive the development of new vaccine technologies. It is pertinent however that new breakthroughs in methods to generate effective neutralizing antibody responses against HIV are urgently needed.(2)

Candidate vaccines go through different phases of trials, before being declared appropriate for use. Phase one tests the safety of the candidate vaccine but the number of participants is between 20 and 100. It can also provide initial data on dosage and administration schedule (the time between vaccinations) that achieve the optimal immune response. Phase two is actually the extension of phase one with more than 100 subjects participating in a trial. Researchers gather more in depth information about human immune responses, and further data on most effective dose and administration schedule. Basically it is the phase that evaluates safety and immunogenicity. Phase I and II clinical trials involve volunteers at low risk for HIV infection. Phase three tests safety and efficacy of the vaccine. It involves thousands of people including those at high risk such as sex workers. There are over 83 candidate HIV vaccines in the world today that are at different phases most of which are in phase I and II. Africa being the most affected area also has taken an interest in HIV vaccine trials.

In Africa, first studies on HIV vaccines, were done in Uganda in 1990s. Other African countries that have conducted studies on HIV vaccines include Kenya, Rwanda, Botswana, South Africa, Malawi and Tanzania.

To date in Tanzania two Phase I/II are being or have been conducted .The HIV vaccine trial in Mbeya has involved the general public and is now at the last stage of follow up of volunteers. The trial in Dar es Salaam involves volunteers from the Police force and is fully enrolled with the needed 60 volunteers. Both the trials are employing a prime boost strategy with priming using DNA and boosting with either Adenovirus-35 in Mbeya or Modified Vaccinia Ankara (MVA) in Dar es Salaam. There are also early preparations for another trial to be conducted in Kilimanjaro region. The conduct of all these trials will ultimately build capacity for eventual participation in the much-needed Phase IIB or III Efficacy clinical trials. Since these trials are a relatively an alien phenomenon in our cultures, it is crucial that information on the awareness, attitude and perceptions is sought from various social cultural groups within the country. This study examined such attributes among students of the University of Dar es Salaam, Tanzania.

Methodology

This was a descriptive cross sectional study, conducted at the University of Dar es Salaam (UDSM) in

Correspondence to: Fredrick Haraka, School of Medicine, P.O.BOX 65001, MUHAS, Dar es Salaam, TANZANIA

[1]MD4 student (2007/2008) at the Muhimbili University of Health And Allied Sciences (MUHAS), [2]Senior Lecturer, Department of Internal Medicine (MUHAS)

March 2007. A sample of 384 students was selected. Sampling was multi-staged. The first was a random selection of Faculties at the University. This was followed by a random sampling of students from the selected faculties to the required study sample size. A self-administered structured questionnaire was used to obtain information after visiting their rooms (for convenience) of residence in the hostel. The main investigator supervised the administration of the questionnaire during the evening hours, and at the end of academic activities. Each participant responded independently to ensure confidentiality. Permission was sought from appropriate authorities and consent was obtained from all participants. Participants were assured of confidentiality of information between the interviewer and the interviewee. Filled questionnaires were coded by the Main investigator at the end of each data collection day. After having been checked for completeness, data was entered into the computer by the main investigator, and was later analyzed using EPI INFO version 6.0 software. A chi-squared test was used to compare proportions. A p-value<0.5 was regarded as statistically significant.

Results

Out of the 384 respondents, 205(53.4%) were female. Majority were aged between 21-25 years. Their overall mean age was 22.0 years with no difference in mean age between the sexes. An almost equal proportion of participants was represented in the respective years of study being 30.7%, 30.5%, and 34.6% for year 1, 2 and 3 respectively. However there were gender differences in the respective proportions by year of study, p=0.014. This is shown in table 1.

Overall, 89.8% of the students had heard, and were therefore aware of the on-going HIV vaccine trial in Dar es Salaam. Their sources of this information were different, but 63.0% of them received the information through various media. As shown in table 2, there were significant differences in awareness by gender and age groups on the on-going HIV vaccine trial in Dar es Salaam.

Table 1. Social Demographic Characteristics

Characteristics	Male n=179	Female n=205	Total 384	*p-value
Age				0.292
<20	6(40.0%)	9(60.0%)	15(100%)	
21-25	130(44.5%)	162(55.5%)	292(100%)	
26-30	36(54.5%)	30(45.4%)	66(100%)	
30>	7(63.6%)	4(36.3%)	11(100%)	
Year of study				0.014
1	53(45.0%)	65(55.0%)	118(100%)	
	66(56.4%)	51(43.5%)	117(100%)	
3	50(37.6%)	83(62.4%)	133(100%)	
4	10(62.5%)	6(37.5%)	16(100%)	

*p-value denotes differences between genders

Table 2. Awareness About the On-going HIV Vaccine Trial in Dar-es-Salaam

Characteristic	Have heard	Have not heard	Total	p-value
Gender				0.022
Male	169 (94.4%)	10 (5.6%)	179 (100%)	
Female	176(85.8%)	29(14.2%)	205 (100%)	
Age group				<0.001
<20	10(66.7%)	5(33.3%)	15(100%)	
21-25	284(97.3%)	8(2.7%)	292(100%)	
26-30	49(74.2%)	17(25.8%)	66(100%)	
>30	2(18.2%)	9(81.8%)	11(100%)	
Year of study				0.114
1	108(91.5%)	10(8.4%)	118(100%)	
2	102(87.2%)	15(12.8%)	117(100%)	
3	123(92.4%)	10(7.6%)	133(100%)	
4	12(75.0%)	4(25.0%)	16(100%)	

Belief in an HIV vaccine as a means to prevent against HIV spread was affirmative in only 26.8% of the students. The respective proportions among male and female students who believed in this were 42.7% and 57.3%, figure 1.

On the other hand 73.2% of them actually believed that the HIV vaccine candidate being tried can indeed cause HIV infection to the person being vaccinated. Consequently 82.6% of the students reiterated that advocacy of other established preventive strategies such as condom use should not be stopped even after the availability of a vaccine against HIV and AIDS. However, 12.5% of the students were of the opinion that should an effective HIV vaccine be discovered, then other preventive measures could as well be stopped. No sex difference could be demonstrated with this attitude. As shown figure 2, the general attitude towards employing an HIV vaccine as being a preventive measure was generally positive for the majority (87.5%) of students. The proportion of 53.3% among females with a negative attitude was higher than that among males, as the majority were of the opinion that it can't be used as a preventive measure.

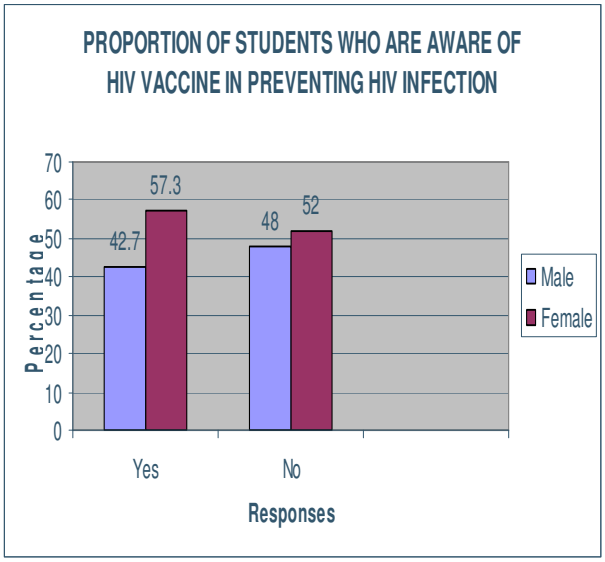

Figure 1. Proportion of students who are aware of HIV Vaccine in preventive HIV Infection

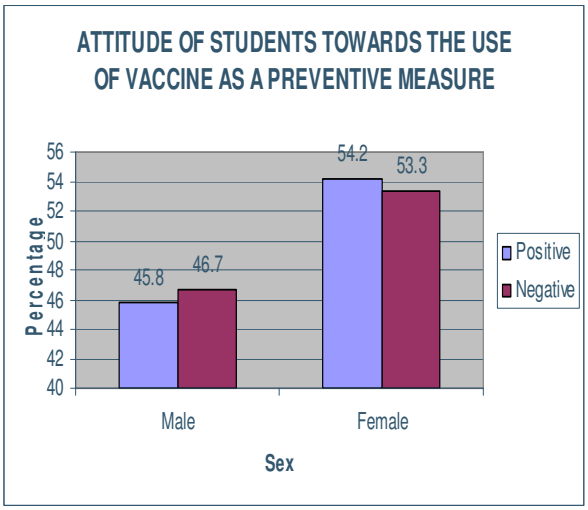

Figure 2. Attitude of students towards the use of vaccine as a preventive measure

The perception of students regarding the appropriate population that should be involved in a vaccine trial was varied. Sex workers (34.1%) and health workers (45%) were the populations most mentioned. Indeed 56.5% of female students thought that the best study population should involve sex workers. Interestingly, University students themselves were not perceived as being the most appropriate population for HIV vaccine studies. Only 14.5% of the students supported the idea that University students could be involved. Among these, males constituted 59.0% and females constituted 41.0% (Figure 3).Figure 4 despites the responses of students as far as actual participation in an HIV vaccine trial is concerned. Only 19.6% of them were ready to participate there on,, (males constituting 52.6% and females constituting 7.2%). However, 48.2% reported their willingness to be active volunteers for the study if and only when they are well informed. Among the 19.8% who are ready to participate right on and 48.1% who would participate after being well informed, the commonest reason put forward for their participation in an HIV vaccine trial was so that they could be protected against HIV 46.0%, as shown in figure 5.

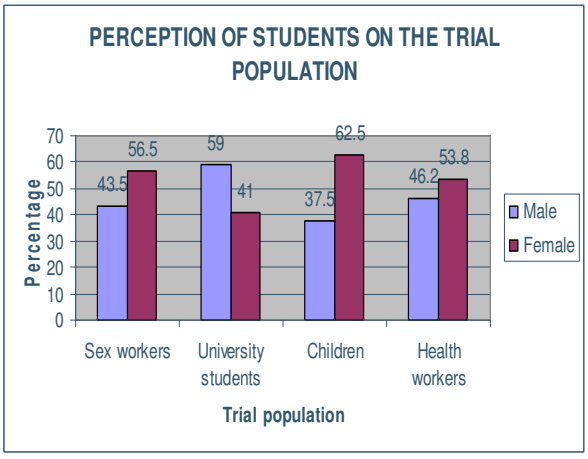

Figure 3. Perception of students on the trial population

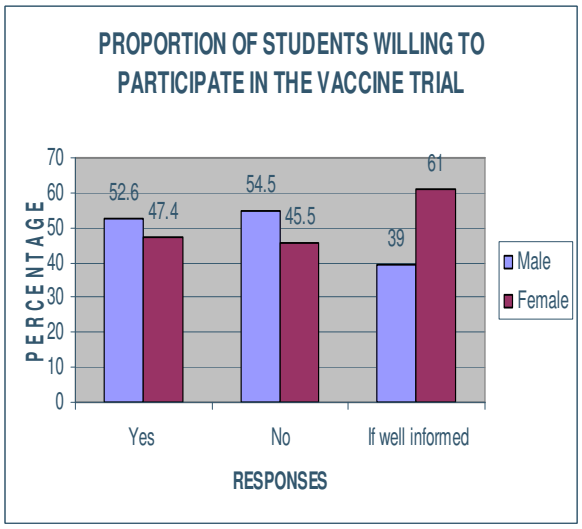

Figure 4. Proportion of students willing to participate in the vaccine trial

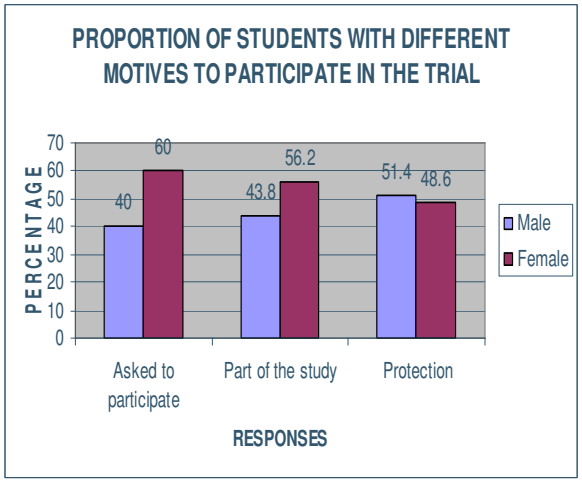

Figure 5. Proportion of students with different motives to participate in the vaccine trail

Discussion

This study was aimed at exploring the awareness, attitude and perception of students at the University of Dar es Salaam. It has shown that despite the fact that many students are aware of the existence of HIV vaccine trials, misconceptions and misperceptions are common.

If one bears in mind that a sub-population of University students is expected to be at a relatively advantaged position in accessing information, such findings call for greater efforts at increasing the community awareness on HIV vaccine trials

It was disturbing to note that the majority of students had little knowledge on the ability of a preventive vaccine to combat the spread of HIV. These findings are contrary to those obtained[3], that was conducted in Italy which showed that over 50% of the participants had adequate knowledge on preventive vaccines. They are also contrary to the findings[.10], in Rakai Uganda who reported that knowledge on utility of preventive vaccine was 71%. This

difference could be explained by the fact that trials on HIV vaccines have just been introduced. Actually the one in Dar es Salaam started enrolling in February 2007.

Media in Tanzania appears to be the important source for information on HIV vaccine studies for the majority of people. In this study, 63% reported to have heard for the first time about HIV vaccine trials being done in this country from the media. This calls for close collaboration between the Scientific Community and Media institutions in passing on correct information to the public. Indeed even in countries like Uganda which started vaccine trials in early 1990s, and Italy where Medicine and Research are well established, the role of media engagement can not be over-emphasized.

The finding that the 82% of students thought that an HIV vaccine should be regarded as complimenting other existing preventive measures such as condom use, rather than being used as a substitute in the fight against HIV and AIDS is consoling. This is especially true, since it is now established that the world is unlikely to get a 100% effective HIV vaccine due to the complexities of the HIV virus and other challenges facing the HIV vaccine world. This fact calls for heightened efforts in promoting the well established preventive strategies against HIV transmission.

Regarding the appropriate population to be engaged in HIV vaccine trials, 34.1% of the students thought of this as those involving sex workers only. HIV and AIDS is associated with stigma especially in least developed countries including those in sub Saharan Africa. It is therefore not surprising that students at the University of Dar es Salaam would think that those to be involved should be a sub-population that is at the highest risk. Indeed this is further shown by a relatively small proportion of students that reported to be ready there and then to be volunteers in an HIV vaccine trial. It was only 19.8% who said they were ready to participate, and 48.2% said they will be ready only if well informed about the vaccine trials and the risks associated with the vaccine. This emphasizes on the need to engage communities early during the planning of HIV vaccine trials, and also emphasizes the fact that educational sessions to the community would-be participants are very crucial. Lower proportions of readiness to participate in HIV vaccine trials had also been quoted[2] in Italy where 37% were willing to participate in a vaccine trial,[4] in London where 23.4% of 506 gay men were willing to participate in another vaccine trial.[7] had also found the proportion to be 23%.

However, there are also reports of higher proportions of populations being willing to participate in HIV vaccine trials. A study in Kenya[5] reported that 64% of mothers were willing to participate in a paediatric HIV vaccine trial. In another study conducted in South Africa, 79% of adolescents reported to be willing to participate in a vaccine trial. Similarly in Uganda,[10] showed that willingness to participate in a trial was 77%. It would appear that these differences are related to the level of preparedness of the community, and the experience that different communities have had with HIV vaccine trials. The magnitude of affection by HIV and AIDS could also be a factor.

Conclusion

In conclusion, majority of students at the University of Dar es Salaam were aware of on-going HIV vaccine trials. Their attitudes to the trials were mixed, and they have a number of misconceptions and misperceptions.

Recommendations

It is therefore being recommended that the community should be educated more on HIV vaccine trials and more socio-behavioral studies need to be done among different social groups in Tanzania to ensure their recruitment and retention in HIV vaccine trials.

Acknowledgement

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