

## 5<sup>th</sup> Asia Pacific Global Summit and Expo on **Vaccines & Vaccination**

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### **Prevalence and incidence of HIV-1 infection, knowledge and willingness to participate in HIV vaccine trial among residents of East Shoa Zone, Ethiopia**

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**Background:** Ethiopia is one of the country's most seriously affected by HIV/AIDS in the world. With 2.2 million individuals living with the virus the 2010 estimate of HIV prevalence is 2.4% ranging from 3.7% in the rural to 13.7% in the urban centers.

**Objective:** Prevalence and incidence of HIV-infection, knowledge and willingness to participate in HIV vaccine trial among residents of East Shoa Zone, Ethiopia, 2010.

**Methods:** This cross sectional study is aimed at investigation of the prevalence and incidence of HIV- 1 infection and to assess knowledge and willingness to participate in HIV vaccine trial among residents of East Shoa Zone. It was conducted in East Shoa Estate between December 2009 and February 2010. A total of 1998 and 371 randomly selected individuals aged 18-29 participated in the serosurvey and behavioral survey respectively. Information regarding sociodemographic characteristics, sexual behavior and knowledge on HIV and vaccines was collected using a structured questionnaire. ELISA test was used to determine the prevalence of HIV-1 infection and the BED IgG capture assay was applied to identify recent infections.

**Result:** The prevalence and incidence of HIV-1 infection was found to be 2.46% and 0.4 per 100 persons respectively. Prevalence of HIV-1 infection was significantly higher among females 3.49% ( $P<0.05$ ) in the age groups 20-24 and 25-29 years (3.57% and 4.83%,  $p<0.05$ , respectively) among the residents of the two villages east shoe zone (3.58%) and Shoa zone (3.34%) and among day laborers (3.73%) all with  $p<0.05$ . There was high knowledge of HIV prevention and low level of misconceptions regarding transmission. But low condom use among those involved in risky sexual behaviors. The majority were also assuming themselves as not being high risk for HIV while they were involved in risky sexual behavior. Despite misconceptions on the uses of vaccines, the majority of the respondents were willing to participate in HIV vaccine trial.

**Conclusion and recommendation:** From this study it was concluded that East Shoa Zone is a low HIV prevalence site with the incidence of HIV infection a bit higher than the existing cohort with adequate knowledge of HIV and few misconceptions regarding transmission of HIV, use of vaccines and remarkable majority willing to participate in HIV vaccine trial. To maintain the prevalence and incidence of HIV-1 infections at a further lower level and conduct HIV vaccine trial a more focused educational intervention is required for the general community with special emphasis on females and the residents of the two factory villages is recommended. The low incidence of HIV-1 infection and the high willingness of participants to enroll in a HIV vaccine trial make east Shoa Zone a potential site for Phase I/II vaccine trial.

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### **Development of Potent Inhibitory Phage Vaccine against Prostate Cancer**

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**I**n this research we pursue a less studied strategy of using PSMA displaying M13 bacteriophage for vaccination against prostate cancer. Bacteriophage vaccine are able to induce both humoral and cellular immune response, therefore, it is expected that vaccination with these recombinant phage would obliterate the immune tolerance to self-antigens and instigate immune system to attack cancerous cell expressing this antigen. The aim of this study is to investigate the possibility of design and production of phage-based cancer vaccine to induce immune response against prostate cancer.

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