Retrovirology

Poster presentation

P20-04. Molecular characterization of HIV-1 detected among injecting drug users and female sex workers in India

S Sengupta*, P Bhanja, R Mullick, R Sarkar and S Chakrabarti

Address: Division of Virology, National Institute of Cholera and Enteric Diseases, Kolkata, India
* Corresponding author

from AIDS Vaccine 2009
Paris, France. 19–22 October 2009

Published: 22 October 2009

Retrovirology 2009, **6**(Suppl 3):P374 doi:10.1186/1742-4690-6-S3-P374

This abstract is available from: http://www.retrovirology.com/content/6/S3/P374

Background

India is experiencing a rapid and extensive spread of HIV-1 and has entered the third stage of epidemic in many urban areas. Majority of HIV infection has been reported to occur through heterosexual contact except in few states, where it occurs through sharing of contaminated needles and syringes among Injecting Drug Users (IDU).

Methods

In order to characterize HIV-1 strains among IDUs and Female Sex Workers (FSW), peptide-EIA, Heteroduplex Mobility Assay (HMA), Multi-region Hybridization Assay (MHA), DNA sequencing and phylogenetic analysis were conducted. Recombinants were detected by simplot analysis. HIV seropositive samples were used to amplify *gag*, *env*, *nef* and *tat* genes by nested polymerase chain reaction (PCR) to determine the HIV-1 subtypes.

Results

Subtype C was found as the major strain among IDUs in North-eastern India along with subtype Thai-B. Phylogenetic analysis showed 89% of samples (25/28) infected with subtype C for both *gag* (p24-p7) and *env* (C2–V3) genes. But, 11% (3/28) showed subtype discordance where the presence of intersubtype recombination between C and Thai-B was detected. However, IDUs from Eastern part of India showed the only prevalence of subtype C based on *gag*, *env* and *tat* genes. The p17 gene encoding HIV-1 matrix protein was analyzed among FSWs in Calcutta and when compared with other Indian and global C-strains, it clearly revealed a different cluster of Indian sequences. Same result was obtained for *gag* and *env* genes. The US-B strain was detected for the first time in Calcutta with respect to both *env* and *nef* genes and more interestingly C/US-B recombinants were also detected based on both the genes.

Conclusion

Emergence of HIV-1 recombinants in both Eastern and North-eastern India, especially among the IDU population has been observed. Continuous monitoring is under progress in our laboratory to see whether any Circulating Recombinant Form (CRF) of HIV-1 is evolving in India.