

TITLE: GENOMIC VARIATION OF HCV AMONG IDU SUBPOPULATION IN THE NORTH-EASTERN STATE OF MANIPUR, INDIA

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Background: The North-Eastern state of Manipur, India has a very high incidence of intravenous drug usage. HCV, HIV and co-infection of both are usually observed among drug users due to frequent sharing of injection needles. The porous border shared between Manipur and neighbouring countries of Myanmar and China and its close proximity to the golden triangle is thought to facilitate cross-border transmission of HCV.

Aim: To study HCV genomic diversity and transmission dynamics in the IDUs subpopulation of Manipur.

Methods: Blood samples were collected from 593 IDUs, including 90 PLHIVs (People Living with HIV). HCV sero-status was checked by ELISA. Viral RNA was extracted and detected by amplifying partial 5'UTR region of HCV genome. Genotyping and recombination study was done by nested PCR of partial Core and NS5B regions followed by Sanger sequencing of positive amplicons. Phylogenetic analysis was performed using MEGA X. Phylodynamic reconstruction was performed and visualised using BEAST package and SPREAD3.

Results: Out of 593 samples, 398 (67.11%) were HCV sero-reactive. Of the 398 sero-reactive samples, HCV RNA was detected in 332 (83.41%) samples. Of the 90 PLHIVs, 74 (82.22%) were found to be HCV sero-reactive. Sequencing data revealed that three genotypes and 10 subtypes were circulating in this region- 1a (5.83%), 1b (5.83%), 3b (34.17%), 3g (7.50%), 3i (8.33%), 6n (19.17%), 6v (1.66%) and 6xa (17.51%).

Conclusions: This study shows a high prevalence of HCV among IDUs in Manipur. PLHIVs who are also drug users showcase an extremely high HCV sero-prevalence. Measures for proper NSPs Needle Syringe Programs and Opioid Substitution Therapies are of utmost requirement. The presence of genotype 6 in high numbers is an interesting find as it is geographically restricted to South East Asian countries like China, Thailand and Myanmar. Furthermore, such transmissions can lead to generation of recombinant and treatment resistant strains.

Disclosure of interest statement: The authors declare no conflict of interest.