

# **Role of CYP2E1 gene polymorphisms association with hepatitis risk in Northeast India.**

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## **Role of CYP2E1 gene polymorphisms association with hepatitis risk in Northeast India.**

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## **Abstract**

**Aim:** To investigate hepatitis virus, genetic and environmental factors, and their interactions in predisposing patients to liver diseases in Northeast India.

**Methods:** A total of 104 jaundice patients and 124 community controls were included. Serological analysis was performed by routine enzyme-linked immunosorbent assay, and nucleic acid testing for hepatitis viruses was done by polymerase chain reaction (PCR), followed by PCR direct sequencing for viral genotyping. Cytochrome P450 2E1 (CYP2E1) polymorphism was studied by PCR-restriction fragment length polymorphism. Nitrite and volatile nitrosamines in indigenous foods consumed routinely by the Northeast Indian ethnic population were estimated by Griess's reagent and GC-MS, respectively.

**Results:** Hepatitis A virus (HAV) infection was predominantly prevalent (36.5%) in our cohort, followed by hepatitis B virus (HBV), hepatitis E virus (HEV) and hepatitis C virus. HBV genotype D and HEV genotype 1 were the most dominant. CYP2E1 c1/c2 genotype frequency was comparatively higher in alcoholic ( $P < 0.0001$ , OR = 30.5) and cryptogenic ( $P = 0.014$ , OR = 8.714) patients, and was associated with significantly higher hepatitis risk ( $P = 0.0007$ , OR = 6.489). Mutant C allele of Cyp2E1 DraI frequency was comparatively higher in HAV ( $P = 0.006$ ), alcoholic ( $P = 0.003$ ) and cryptogenic ( $P = 0.014$ ) cases, and was associated with overall hepatitis risk ( $P = 0.026$ , OR = 5.083). Indigenous foods, Gundruk, Kharoli, betel leaf and nuts were found to have the highest nitrite content.

**Conclusion:** Apart from viral factors, CYP2E1 polymorphism might be associated with increased risk of liver diseases in Northeast India. Indigenous foods that contain nitrite and nitrosamine might be an associated risk factor.

## **Reference**

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