

The impact of hepatitis B virus genotype on disease manifestations among Aboriginal and Torres Strait islander Australians in Far North Queensland.

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Background: No Aboriginal Australian living with chronic hepatitis B has been diagnosed with hepatocellular carcinoma (HCC) in Far North Queensland (FNQ) since 2000. It is uncertain if differences in prevailing hepatitis B virus (HBV) genotypes in the region explain this striking finding.

Methods: This study enrolled Aboriginal and Torres Strait Islander Australians living with chronic hepatitis B in FNQ, determined their HBV genotype and correlated this with demographic and clinical findings.

Results: It was possible to determine the genotype of 129/191 (68%) enrolled individuals: this was genotype C in 89 (69%), genotype D in 39 (30%) and genotype A in 1 (1%). All 39 people with genotype D had Aboriginal heritage (37/39 (95%) were Aboriginal, 2/39 (5%) identified as both Aboriginal and Torres Strait Islander). Of the 89 people with genotype C, only 8 (9%) were Aboriginal, 71 (80%) were Torres Strait Islanders, 10 (11%) identified as both).

All 3 HCCs that developed during a median (interquartile range (IQR)) follow-up of 1.3 (0.9-2.3) years occurred in Torres Strait Islanders; 2/3 had a C14 genotype; genotyping was not possible in the other individual. Of the 10 cases of cirrhosis, 9 occurred in Torres Strait Islanders. It was possible to genotype 5 of these; all 5 had a C14 genotype. One case of cirrhosis occurred in an Aboriginal individual who had a D2 genotype, but he also had a history of hazardous alcohol use.

Individuals with genotype C were younger than those with genotype D (median (IQR) 51 (40-65) versus 41 (37-46), $p=0.0003$). However, individuals with genotype C were more likely to be HBeAg positive (23/89 (26%) versus 2/39 (5%), $p=0.007$).

Conclusion: The prevailing HBV genotypes in Aboriginal and Torres Strait Islander Australians in FNQ differ markedly and could explain the significant differences in the clinical phenotype seen in the two populations.

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