

Hepatitis delta and liver disease among people living with hepatitis B in Senegal

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Background: Hepatitis delta virus (HDV) infection is the most severe form of viral hepatitis. However, its prevalence among persons living with hepatitis B virus (HBV) infection in West Africa, and its impact on liver-related complications is ill defined. We tested a large urban HBV cohort in Senegal for the presence of HDV infection and evaluated its association with liver cirrhosis.

Methods: We included all HBsAg-positive individuals, with or without HIV co-infection, who presented between October 2019 and September 2022 to one of two referral infectious disease clinics in Dakar, Senegal. All participants underwent clinical and virological assessments, as well as transient elastography (TE). We tested for anti-HDV antibodies using the Anti-HD Liaison XL test (DiaSorin, Belgium) on cryopreserved dried blood spots. Anti-HDV IgG-positive specimens were tested for the presence of HDV RNA using a sensitive RT-PCR of the end of HDV-Ag region of the genome, and genotypes were determined after sequencing. We used multivariable logistic regression to explore the association between HDV-positivity and liver fibrosis, defined as TE>7.0 kPa.

Results:

Among 585 participants, median age was 32 years (interquartile range [IQR] 26-41), 274 (46.8%) were women and 94 (16%) had HIV-coinfection. Eleven (1.9%) participants had anti-HDV antibodies, of whom 8 (72.7%) showed active replication. HDV-5 genotype was found in 6 of 8 individuals, while the other two had HDV-1 and HDV-7. Compared to individuals with a negative HDV serology, those with anti-HDV antibodies were more likely to have an undetectable HBV viral load (81.8% vs. 35.3%) and liver fibrosis or cirrhosis (54.4% vs 9.8%). 5 of 8 (62.5%) individuals with detectable HDV-RNA had liver cirrhosis. In multivariable analyses, HDV-positivity (adjusted odds ratio 18.91, 95% confidence interval 3.61-99.04) and male sex (5.88, 2.63-13.15) were strong predictors of liver fibrosis.

Conclusions: Although the prevalence of hepatitis delta was low in our large cohort of persons living with HBV in Dakar, those affected had a very high risk of presenting with liver cirrhosis. Efforts to improve HDV screening and management are urgently needed in West Africa.

Ethical research declaration: Yes

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