



HCV Genotype 5a presenting with hepatocellular cancer: First report from India

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Abstract:

HCV genotype 3 followed by genotype 1 are the predominant genotypes in India. Genotype 5 has been reported only in case reports from India previously. We report the case of a 70 year old male who presented with Hepatocellular carcinoma in the background of chronic hepatitis C. The patient during the evaluation was found to have genotype 5. Considering the rarity of the entity, we report this case with phylogeny and other details.

Keywords: Hepatitis C virus, Hepatocellular carcinoma, Hepatitis C genotyping.

Case scenario

A 70-year-old farmer, presented with right upper quadrant abdominal pain with significant weight loss since 5 months. He had no history of jaundice, decompensation of liver disease, blood transfusion or any high risk behavior. His Haemogram, liver and kidney function tests were normal. Antibody to HCV (anti-HCV) test was positive while HBsAg and total Core Antibody (antiHBc total) were negative. CT abdomen showed 4 nodules scattered in both lobes of the liver with arterial enhancement and heterogeneity in washout in the lesions, without vascular involvement or extra hepatic disease. In view of typical imaging findings, biopsy was done which showed a clear cell variant of hepatocellular carcinoma. In view of BCLC (Barcelona Clinic Liver Cancer staging) B hepatocellular carcinoma with Child A cirrhosis, patient underwent Trans-Arterial Chemo-Embolisation (TACE). There was good response to TACE on triphasic CT abdomen with >50% necrosis in 3 lesions without hepatic decompensation. Further investigation revealed an HCV RNA titer of 233000 IU/ml by Real time PCR. Genotyping revealed Genotype 5a HCV infection. He was started on sofosbuvir and velpatasvir for 12 weeks as antiviral therapy. He achieved Sustained Virological Response at 12 weeks with undetectable HCV RNA (SVR12). In the interim, another session of TACE was done 2 months after the first session, for residual lesions of HCC. He showed good response on CT abdomen with almost complete necrosis in 3 lesions with another lesion showing partial response, without development of new lesions. The patient during follow up received 1

more session of TACE without hepatic decompensation with adequate necrosis in all lesions on imaging, and presently only on surveillance.

Discussion

Genotype 5 is a rare genotype of HCV accounting for <1% worldwide infections, with only one known subtype¹. It is most commonly reported from South Africa, where it accounts for 40% infections in certain cohorts. There is poor understanding of the natural history with data on antiviral for treating genotype 5a infections being limited, considering the small number of patients treated². The recommended treatment at present includes fixed dose combination of sofosbuvir with velpatasvir in treatment naïve or experienced, cirrhotic or non-cirrhotic patients for a period of 12 weeks. To our knowledge, this is the first case of Hepatocellular carcinoma reported with HCV genotype 5a from India. Only 3 previous reports of Genotype 5a infection in 4 patients from India were found in the literature review³⁻⁵. Based on full-length molecular characterization, genotype 5 and genotype 3, the predominant genotype in India, arise from a common ancestor. No clear risk factor for HCV was identified in our case or any of the reported cases. As per a previous study from South Africa, the carcinogenicity of genotype 5 is similar to other genotypes⁶. This case puts light on the small reservoir of genotype 5 hepatitis C virus in the Indian subcontinent. Alternatively, genotype 3 may undergo mutations and mimic genotype 5. Further studies on the prevalence and natural history of Hepatitis C genotypes in the Indian Subcontinent are needed.

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