HCV DIVERSITY AND TREATMENT OUTCOMES FOLLOWING DIRECT-ACTING ANTIVIRAL (DAA) THERAPY IN BENIN

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Background: 10.15 million people are estimated to be actively infected with the Hepatitis C Virus (HCV) in sub-Saharan Africa (SSA). The seroprevalence of HCV in Benin is 3.8%. Direct Acting Antivirals (DAAs) have revolutionised HCV treatment, but few trials have been conducted in SSA where endemic HCV genotypes exist that are rare in high income countries. We aimed to characterise circulating HCV genotypes and to measure sustained virological response (SVR) to DAA treatment in Benin.

Methods: 100 HCV-antibody positive individuals were sampled from two hospitals in Benin. Viraemic samples were identified by the West of Scotland Specialist Virology Laboratory (Abbott RealTime HCV). Target enrichment HCV sequencing was conducted at the MRC-CVR-University of Glasgow. At the time of reporting, 52 of the HCV-RNA positive patients had completed therapy and had received the following DAA regimens: Sofosbuvir/Ledispavir (12/52); Sofosbuvir/Velpatasvir (35/52), Sofosbuvir/Velpatasvir/Ribavarin (4/52); Sofosbuvir/Ledispavir/Ribavarin (1/52).

Results: 79/100 samples were PCR positive and 57/79 were sequenced successfully using target enrichment next generation sequencing. The predominant genotypes were 1 and 2 with subtype 2d being the most common known subtype (22.22%) followed by subtype 1b (7.41%). Many previously unassigned subtypes of genotypes 1 (31.49%) and 2(24.08%) were identified with phylogenetic clustering suggesting novel subtypes. Over 77% of the samples had resistance associated polymorphisms at position 28 (F/L28F, L/M28M), 57.41% at position 24(K/Q24K, S/T24S), 33.33% at position 31 (L/M31M) and 11.11% at position 93 (Y93H/N) of the NS5A protein. 94% (49/52) of treated individuals achieved SVR12. Of the 3 treatment failures, 2 were cirrhotic and infected with subtype 2d and 1 was infected with subtype 2b.

Conclusion: The genetic diversity of HCV in Benin is high, this study has discovered novel subtypes of genotypes 1 and 2. SVR12 rates were excellent. However, infections with HCV subtypes 2b and 2d may be potentially more challenging to treat.

Disclosure of Interest: None