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Secondary occult Hepatitis C Virus infection (HCV) in chronic HCV patients after treatment with sofosbuvir and daclatasvir

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HCV direct-acting antivirals revolutionized the treatment outcomes especially in areas considered to be highly endemic as Egypt, where the government adopted a National Treatment Program and successfully reached a large sector of the HCV patient's population. High response rate to treatment with Sofosbuvir and Daclatasvir necessitated confirmation of total cure through excluding HCV occult infection. Our aim was to estimate the occurrence of occult HCV in patients treated with Sofosbuvir and Daclatasvir, by detecting HCV RNA in their PBMCs. Quantitative estimation of HCV viral load in serum samples and PBMCs of 40 patients undergoing treatment with Sofosbuvir and Daclatasvir, was done using COBAS Ampliprep™/COBAS TaqMan™. At the start of treatment serum samples were positive for HCV RNA (ranged from 2.50×10^3 - 6101.0×10^3). After one month of the treatment our data revealed that serum HCV RNA was negative by PCR. After three months, HCV RNA was detected in PBMCs in 10 out of 40 via RT-PCR. Comparison between the results of HCV RNA in serum and PBMCs by PCR after three months of treatment, showed statistically significant difference of $p=0.001$. This reveals the high prevalence of HCV RNA in PBMCs denoting occult HCV infection after combined treatment with Sofosbuvir and Daclatasvir. It also signifies that although the combined treatment was effective in eliminating the virus from the serum, it is less effective in its elimination from the PBMCs. These results also highlight the importance of testing for HCV RNA in PBMCs after end of treatment to confirm total HCV elimination.

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