Hepatitis C virus co-infected with HIV in the era of direct-acting antivirals

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Hepatitis C virus (HCV) coinfection is prevalent in patients with human immunodeficiency virus (HIV) and has an accelerated liver diseases. Co-infected individuals are traditionally considered as one of the "special populations" amongst those with chronic hepatitis C, because of rapid progression to end-stage liver disease and suboptimal responses to treatment with pegylated interferon alpha and ribavirin (PEG-IFN/RBV). IFN-based therapies that are still standard of care (SOC) in several Asian countries, had also been influenced by IL28B genetic variants and liver fibrosis stage. However, IFN-free direct-acting antiviral (DAA) therapies increase sustainedvirologic response (SVR)rates to levels identical to those seen in HCV monoinfection, and the DAA combinations obscure the influence of IFNL3-L4, althoughIFNL3-L4 genotyping might be useful for making decisions on suitable regimen and treatment duration in the era of DAAs. Several DAAs have now entered clinical practice and others have reached advanced stages of clinical development. There is convincing evidence that HIV co-infection no longer diminishes the response to treatment against HCV in the new era of DAA-based therapy. These therapies offer significant benefits such as improved rates of SVR, shortened durations of treatment, and compatibility with antiretroviral (ARV) agents. However, drug-drug interaction between ARV agents and HCV medication (DAAs) is the major consideration in deciding on the appropriate HCV therapeutic approach in patients with HIV. Although the combination of sofosbuvir and ledipasvir can be safely used with most ARVs, tenofovir exposure is significantly increased when used with sofosbuvir-ledipasvir and a boosted protease inhibitor or efavirenz, and therefore should be used with cautious monitoring for renal toxicity when alternative therapy is not available. This lecture summarizes the currently available data with HCV DAAs in patients with HIV, and focuses on predicting and managing drug interaction to facilitate successful DAA-based HCV therapy in those with HIV.