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Effectiveness of Direct-acting Antiviral Drugs in HCV Monoinfected *vs.* HCV/HIV Coinfected Individuals in Real-world Settings

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Introduction

Hepatitis C virus infection remains a global health challenge, despite advances in treatment options over the past decade. The development of direct-acting antivirals has revolutionized the management of HCV, offering high cure rates and shorter treatment durations compared to older regimens. However, the effectiveness of DAAs can vary depending on the presence of co-infections, particularly with HIV. Individuals co-infected with HIV and HCV may experience different treatment outcomes compared to those with HCV alone, due to factors such as immune suppression, drug interactions, and variations in liver function. This article explores the efficiency of DAAs in HCV-monoinfected individuals compared to HCV/HIV-coinfected individuals in real-world clinical settings [1,2].

Description

Hepatitis C and HIV are two viral infections that commonly coexist in certain populations, particularly among individuals who engage in high-risk behaviors such as intravenous drug use or unprotected sex. Both viruses target the liver (in the case of HCV) and the immune system (in the case of HIV), leading to a complex interaction between the two infections. When co-infection occurs, the consequences can be more severe, with individuals at higher risk of liver cirrhosis, liver failure, and hepatocellular carcinoma. The treatment for HCV has drastically changed with the advent of direct-acting antivirals (DAAs), which target specific steps in the HCV replication cycle. DAAs are known for their high efficacy, low side effects, and relatively short treatment durations. However, while DAAs have shown remarkable success in clinical trials, the effectiveness in real-world settings can vary, especially in patients with co-existing conditions such as HIV.

Direct-acting antivirals (DAAs) are a class of medications that directly target and inhibit specific enzymes essential for HCV replication. The key classes of DAAs include protease inhibitors (e.g., glecaprevir, grazoprevir), NS5A inhibitors (e.g., ledipasvir, velpatasvir), and NS5B polymerase inhibitors (e.g., sofosbuvir, dasabuvir). These drugs have significantly improved the treatment landscape for HCV by offering high rates of sustained virologic response (SVR), which is a key marker of treatment success. The efficacy of DAAs is generally very high in HCV monoinfected individuals, with SVR rates exceeding 90% for most patients. These results have made DAAs the standard of care for individuals infected with HCV, regardless of genotype, cirrhosis status, or previous treatment history. However, the presence of HIV complicates HCV treatment. HIV co-infected individuals may have compromised immune systems due to the effects of HIV on CD4+ T cells, and this can influence their response to HCV treatment. Additionally, HIV treatment often involves antiretroviral drugs (ARVs), which can interact with DAAs, either reducing their efficacy or increasing the risk of side effects [3-5].

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Conclusion

In real-world settings, DAAs are highly effective for treating HCV, with sustained virologic response rates being slightly lower in HIV/HCV co-infected individuals compared to those with HCV alone. The presence of HIV complicates HCV treatment due to factors such as immune suppression, liver disease severity, drug interactions, and adherence challenges. However, with appropriate management of HIV and careful attention to drug-drug interactions, many co-infected individuals can achieve a cure for HCV. As both HIV and HCV treatment strategies continue to evolve, it is essential to ensure that individuals with co-infection receive the best possible care to optimize treatment outcomes and reduce the burden of both infections.

Acknowledgement

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Conflict of Interest

None.

References

1. Isasi, Rosario M. and Bartha M. Knoppers. "Governing stem cell banks and registries: Emerging issues." *Stem Cell Res* 3 (2009): 96-105.
2. Geraghty, R. J., A. Capes-Davis, J. M. Davis and J. Downward, et al. "Guidelines for the use of cell lines in biomedical research." *Br J Cancer* 111 (2014): 1021-1046.
3. Wrigley, Jonathan D., Eileen J. McCall, Claire L. Bannaghan and Laura Liggins, et al. "Cell banking for pharmaceutical research." *Drug Discov Today* 19 (2014): 1518-1529.
4. Hay, R. J. "Human cells and cell cultures: Availability, authentication and future prospects." *Hum Cell* 9 (1996): 143-152.
5. Brown, Katherine S., Mahendra S. Rao and Heather L. Brown. "The future state of newborn stem cell banking." *J Clin Med* 8 (2019): 117.

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