



Advances in Hepatitis C Treatment: A Review of Direct-Acting Antiviral Therapies

Fung Hinman *

Department of Internal Medicine, University of Angers, Angers, France

DESCRIPTION

Hepatitis C, a chronic liver disease caused by the Hepatitis C Virus (HCV), has been a significant public health challenge for decades. The discovery of HCV in 1989 marked the beginning of a new era in understanding and managing this infectious disease. However, it wasn't until the development of Direct-Acting Antiviral (DAA) therapies that a significant change occurred in the treatment landscape of HCV. DAAs have revolutionized HCV treatment by offering a cure to the majority of patients. These medications work by directly targeting the life cycle of the Hepatitis C virus, preventing it from replicating and causing further liver damage. The introduction of DAAs has dramatically increased the Sustained Virological Response (SVR) rates, which is a marker for the cure of the infection, to over 95%. The latest advancements in DAA therapies include the development of pan-genotypic regimens, such as sofosbuvir-velpatasvir and glecaprevir-pibrentasvir. These combinations are effective across all HCV genotypes, simplifying the treatment approach and making it accessible to a broader patient population. DAAs have shown efficacy in treating not only chronic HCV infections but also acute and recent infections. This is particularly important as early treatment can prevent the progression to chronic liver disease and reduce the transmission of the virus. The introduction of DAAs has not only improved clinical outcomes but also had a positive economic and social impact. By curing HCV, DAAs reduce the long-term healthcare costs associated with managing chronic liver diseases and their complications. Patients who achieve SVR can return to their normal lives, with improved quality of life and productivity.

Despite the success of DAAs, challenges remain. Access to these life-saving treatments is still limited in many parts of the world. Moreover, the high cost of DAAs poses a barrier to widespread use, especially in low-income countries. Additionally, there is no vaccine for HCV, making prevention efforts potential. The future of HCV treatment lies in further improving the

accessibility and affordability of DAAs. Research is also focused on developing shorter treatment durations, addressing treatment failure, and overcoming resistance. Early detection of HCV is critical for effective treatment. Advances in screening and diagnostic technologies have enabled the identification of HCV infections in various settings, including primary care and community-based programs. The implementation of universal screening for HCV among adults and pregnant women is a step forward in detecting and treating the infection early. The management of HCV has also evolved to adopt a more patient-centered approach. This includes considering patient preferences, addressing comorbidities, and providing support services such as counselling and substance use treatment. The integration of care models that encompass these aspects has shown to improve patient outcomes and adherence to therapy. Ongoing research in DAA therapies aims to develop even more effective and tolerable regimens. Scientists are exploring combination therapies that can reduce the duration of treatment while maintaining high efficacy. There is also a focus on developing treatments that can neutralize the virus's ability to develop resistance.

CONCLUSION

The advent of Direct-Acting Antiviral (DAA) therapies has transformed the treatment of Hepatitis C, offering hope for millions affected by the disease. Global health initiatives, such as the World Health Organization's (WHO) goal to eliminate viral hepatitis as a major public health threat by 2030, have spurred collaboration among countries, non-governmental organizations, and the pharmaceutical industry. Efforts to negotiate pricing agreements, increase generic production, and implement national hepatitis plans are being made to achieve this ambitious target. With continued research and global efforts to improve access, the dream of eradicating HCV is closer to becoming a reality.

Correspondence to: Fung Hinman, Department of Internal Medicine, University of Angers, Angers, France, E-mail: hinm@ang.fr

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