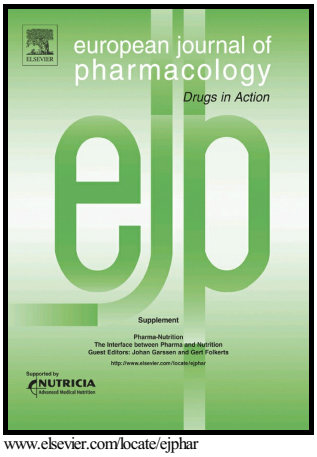

www.elsevier.com/locate/ejphar

Strategies for the treatment of HBV/HDV

Andreas Krause, Uwe Haberkorn, Walter Mier

PII: S0014-2999(18)30360-1
DOI: https://doi.org/10.1016/j.ejphar.2018.06.030
Reference: EJP71860

To appear in: *European Journal of Pharmacology*

Received date: 15 May 2018
Accepted date: 19 June 2018

Cite this article as: Andreas Krause, Uwe Haberkorn and Walter Mier, Strategies for the treatment of HBV/HDV, *European Journal of Pharmacology,* https://doi.org/10.1016/j.ejphar.2018.06.030

Review

Strategies for the treatment of HBV/HDV

Andreas Krause, Uwe Haberkorn, Walter Mier

Department of Nuclear Medicine, Ruprecht-Karls University, University Hospital, 69120 Heidelberg, Germany

A B S T R A C T

An estimated 240 million people worldwide are chronically infected with the hepatitis B virus (HBV). Despite readily available vaccination, HBV infections remain highly prevalent. As established HBV infections constitute a strong risk factor for developing hepatocellular carcinoma their treatment is a major task for the health system. Unfortunately, HBV is not curable with today's medicine. Approximately 15 million HBV patients have developed a hepatitis delta (HDV) infection on top of their HBV infection. The patients superinfected with this satellite virus suffer from a more severe disease development. The knowledge of the viruses, their classifications, clinical implications, treatment options and efforts to increase the drug variety are compiled in this review. The current standard therapies include nucleosidic reverse transcriptase inhibitors and interferon. As the known treatments fail to cure HBV and HDV, targeted treatment is highly warranted. The focus of this review is set on the drugs currently under clinical investigation. Furthermore, strategies for the development of targeted treatment, and compounds with novel mode of action are described.

A R T I C L E I N F O

Keywords:

HBV, HDV, therapy, antivirals, hepatitis

1. Introduction

An estimated 290 million people worldwide have been infected with the hepatitis B virus (HBV) in 2016 (Polaris Observatory, 2018). Although the prevalence has declined in high-endemicity regions, it still remains over eight percent in Western sub-Saharan Africa and over five percent in Africa and East-Asia (Ott et al., 2012; WHO). High-income countries in Western Europe and North America share a very low prevalence of HBV at less than two percent (Ott et al., 2012; Polaris Observatory, 2018; WHO). Prior to contact with HBV, immunization is the most effective and safest route to prevent infection; the vaccine is eligible for newborns and adults alike but it is ineffective if the disease is already established (Goyal and Murray, 2014; WHO). Particularly in highly endemic populations, mother-to-child transmission is very common, as is infection in young children under five years of age (Goyal and Murray, 2014; Ott et al., 2012; WHO). In contrast to a horizontally transmitted infection in older age, this group has the highest risk of becoming chronically infected, with one third developing cirrhosis and liver cancer in adulthood (Goyal and Murray, 2014; Kew, 2010; WHO).