Boceprevir
A Review of Its Use in the Management of Chronic Hepatitis C Genotype 1 Infection

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Data Selection
Sources: Medical literature (including published and unpublished data) on ‘boceprevir’ was identified by searching databases (including MEDLINE and EMBASE) for articles published since 1996, bibliographies from published literature, clinical trial registries/databases and websites (including those of regional regulatory agencies and the manufacturer). Additional information (including contributory unpublished data) was also requested from the company developing the drug.

Search strategy: MEDLINE and EMBASE search terms were ‘boceprevir’ and ‘hepatitis C’. Searches were last updated 30 November 2012.

Selection: Studies in patients with hepatitis C who received boceprevir. Inclusion of studies was based mainly on the methods section of the trials. When available, large, well controlled trials with appropriate statistical methodology were preferred. Relevant pharmacodynamic and pharmacokinetic data are also included.

Index terms: boceprevir, hepatitis C, chronic, genotype 1, pharmacodynamics, pharmacokinetics, therapeutic use, tolerability.

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Boceprevir (Victrelis®) is an inhibitor of the hepatitis C virus (HCV) non-structural protein NS3-4A serine protease and is used in combination with pegylated interferon (peginterferon)-alpha and ribavirin in the treatment of adults with chronic HCV (chronic hepatitis C) genotype 1 infection. Of the various genotypes of HCV, genotype 1 is one of the least responsive to interferon and ribavirin-based therapy, and thus most in need of novel treatments. This article reviews the available pharmacological properties of boceprevir and its clinical efficacy and tolerability in the treatment of chronic hepatitis C genotype 1 infection in adult patients who are either treatment-naive or have failed previous standard therapy.

Boceprevir, when co-administered with peginterferon-alpha and ribavirin in patients with chronic hepatitis C genotype 1 infection who were treatment-naive or had previously not fully responded to or had relapsed following treatment, was associated with a significantly higher sustained virological response rate (defined as the proportion of patients with an undetectable plasma HCV RNA level at week 24 of the follow-up period [week 72 overall] [primary endpoint] than peginterferon-alpha-2b and ribavirin alone, regardless of the boceprevir administration regimen, in the phase III SPRINT-2 (treatment-naive patients) and RESPOND-2 (previously treated patients) trials. There was no significant difference between full-duration (44 weeks) and response-guided (24 or 32 weeks followed by follow-up or peginterferon-alpha-2b plus ribavirin alone) boceprevir regimen recipients with regard to sustained virological response rate. All patients received an initial 4-week lead-in treatment period before the comparative treatment period began.

Overall, boceprevir is generally well tolerated when administered concomitantly with peginterferon-alpha plus ribavirin in patients with chronic hepatitis C genotype 1 infection. The most common adverse events in any treatment group were flu-like symptoms, which are typically reported in patients receiving peginterferon-ribavirin therapy. The addition of boceprevir to peginterferon-alpha and ribavirin is associated with an increased risk of anaemia and neutropenia.

In conclusion, boceprevir in combination with peginterferon-alpha and ribavirin is an effective and generally well tolerated treatment for treatment-naive or previously treated adult patients with chronic hepatitis C genotype 1 infection. The drug is associated with higher sustained virological response rates in these patients, in whom treatment with interferon and ribavirin alone may not be successful. Thus, boceprevir in combination with peginterferon-alpha and ribavirin is a valuable new treatment option for use in patients with chronic hepatitis C genotype 1 infection.

1. Introduction

Hepatitis C is a contagious liver disease that is caused by infection with the hepatitis C virus (HCV), and is one of the main causes of chronic liver disease worldwide. HCV spreads through contact with blood from an infected person, and infection can result in a range of disease severities, from a mild, acute illness to a serious lifelong illness. There are six genotypes of HCV (genotypes 1–6) and a large number of subtypes. Genotype 1 (subtypes 1a and 1b) is the