High HBV and HIV Coinfection With Treatment in B/F/TAF Studies

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Introduction

- Hepatitis B virus (HBV) is a common coinfection in HIV patients and is found in between 1% and 20% of individuals coinfected with HIV and HBV, and confers additional risks as high as 25% in areas where both infections are endemic.
- Coinfection worsens morbidity and mortality synergistically – HBV/HIV-coinfected patients have higher HBV DNA levels compared to healthy HBsAg-positive individuals.
- Tenofovir alafenamide (TAF) is active against HBV and approved for treatment of HBV in HIV-1–infected patients.

Methods

- HBV Assessments and Definition of Active HBV Infection: 
  - All participants enrolled in the 4 studies were tested for HBV serologies at screening and Week 48.
  - Active HBV infection at study entry (primary endpoint) was defined as HBsAg-positive (HBsAg) in serum or prior to 1st dose date, or HBeAg-negative, HBV surface antibody (HbsAb)-positive, HBsAg-negative, HBV DNA <20 IU/mL at baseline and prior to 1st dose date.
  - Participants with active HBV infection at screening were excluded from Studies 1489 and 1484.
- Comparator arms did not include guidelines-recommended pre-treatment HBV serology retests to minimize selection bias.

HBV Outcomes for Participants With Active HBV/HBV Coinfection at Study Entry: Studies 1489 and 1487

- For participants with active HBV infection on entry into Studies 1489 and 1487, the proportion with HBV DNA ≥20 IU/mL at Week 48 was assessed using a masked, unblinded, independent laboratory to assess the effect of treatment with B/F/TAF in reducing overall HBV DNA levels.
- The Feasibility Study 1490 measured HBV DNA levels at baseline and at Week 48.

Identification of Potentially Incident HBV Cases: Acquired HBV Infection in Studies 1489, 1484, 1483, and 1487

- Potential incident HBV infection was defined as participants enrolled in any of the 4 studies who were not HBV/HBV-coinfected at baseline (BL) and met the following criteria:
  - BL HBsAg-positive after 1st dose date, or
  - BL HBeAg-negative, HBsAb-positive, HBeAg-negative, and quantitative HBV DNA <20 IU/mL at baseline (BL).
- HBV serology and DNA data for participants who met criteria for potential incident HBV infection were reviewed to determine whether incident HBV infection occurred.

Incident HBV Infections

- All participants with HBV DNA ≥20 IU/mL at Week 48 had HBV DNA ≥20 IU/mL at baseline (BL).
- Two participants in the SBR group had HBV DNA ≥20 IU/mL at BL, 1 randomized to continue ATTV/FTV + TDF had HBV DNA ≥20 IU/mL at BL on week 48.

HIV Outcomes and HBV DNA Results at Week 48

- All participants with HBV DNA ≥20 IU/mL at Week 48 had HBV DNA ≥20 IU/mL at baseline (BL).
- Two participants (7%) had HBV DNA ≥20 IU/mL at BL.
  - Both had HBV DNA >170,000,000 IU/mL, at BL and were HBV-negative (BL) on treatment for 48 weeks and HBsAg-positive (BL) and HBsAb-positive (BL) at Week 48.

- Eleven (85%) achieved HBV DNA <29 IU/mL at Week 48

Switch Study Designs

- Primary endpoint: proportion with HBV DNA ≥20 IU/mL at Week 48
- HBV DNA target was reached by Investigator decision at Day 48
- n=13 had post-BL HBV DNA assessments

Study Treatment-Naive Study Designs

- n=5 (36%) had HBV DNA >170,000,000 IU/mL: 4 were hepatitis B e antigen (HBeAg) positive at BL, 1 was HBsAg positive at BL
- n=4 (28%) had HBV DNA <20 IU/mL at BL
- n=6 (43%) had HBV DNA ≥20 IU/mL at BL

Conclusion

- The results confirm the findings from prior studies of ART with HBV activity in patients with HBV/HBV coinfection.
- Higher hepatitis B virus suppression rates after 48 weeks of treatment are not achieved in non-infected patients.
- Not all patients become undetectable even in the setting of high HBV viral loads.
- Further studies of HBV treatment and prevention with B/F/TAF and other HBV agents are warranted to reduce HBV/HBV coinfection.

Acknowledgments


References

1. Vemlidy [package insert].

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