Hepatitis B Medications

Tenofovir Alafenamide (Vimlidy)

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Tenofovir alafenamide (TAF)
Summary of Key Studies

- **Phase 3 Trials**
  - Study 108: TAF versus TDF in HBeAg-Negative
  - Study 110: TAF versus TDF in HBeAg-Positive
Tenofovir AF vs Tenofovir DF in HBeAg-Negative Study 108
Tenofovir AF vs Tenofovir DF for HBeAg-Negative Study 108: Design

- **Background**
  - Randomized double-blind placebo-controlled non-inferiority trial of tenofovir alafenamide (TAF) versus tenofovir disoproxil fumarate (TDF) in HBeAg-negative adults with chronic hepatitis B

- **Subjects (n = 426)**
  - Age ≥18 years
  - Chronic HBeAg-negative
  - HBV DNA level >20,000 IU/mL
  - ALT >60 IU/L in men, >38 IU/L in women; ALT <10 x ULN for both

- **Regimen**
  - Tenofovir AF: 25 mg once daily with matching placebo
  - Tenofovir DF: 300 mg once daily with matching placebo

- **Study End-Point**
  - HBV DNA level <29 IU/mL at week 48

Tenofovir AF vs Tenofovir DF for HBeAg-Negative Study 108: Design

**Study Participants**
- HBeAg-negative
- HBV DNA level >20,000 IU/mL
- ALT >60 IU/L for men
- ALL >38 IU/L for women
- CrCl >50 mL/min

**Time 0**

- **Tenofovir alafenamide:** 25 mg/day (n = 285)

**Week 48 Analysis**

- **Tenofovir DF:** 300 mg/day (n = 140)

**Week 96 Analysis**

### Tenofovir AF vs Tenofovir DF for HBeAg-Negative Study 108: Baseline Characteristics

<table>
<thead>
<tr>
<th>Baseline Characteristic</th>
<th>Tenofovir AF (n = 285)</th>
<th>Tenofovir DF (n = 140)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, mean (±SD), years</td>
<td>45 (12)</td>
<td>48 (10)</td>
</tr>
<tr>
<td>Male, no. (%)</td>
<td>173 (61)</td>
<td>86 (61)</td>
</tr>
<tr>
<td>Race, no. (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td>205 (72)</td>
<td>101 (72)</td>
</tr>
<tr>
<td>White</td>
<td>71 (25)</td>
<td>35 (25)</td>
</tr>
<tr>
<td>Black</td>
<td>5 (2)</td>
<td>3 (2)</td>
</tr>
<tr>
<td>Other</td>
<td>4 (2)</td>
<td>1 (1)</td>
</tr>
<tr>
<td>ALT &gt; ULN by central lab, no. (%)</td>
<td>236 (83)</td>
<td>121 (86)</td>
</tr>
<tr>
<td>HBV DNA, log_{10} IU/mL (±SD)</td>
<td>5.7 (1.3)</td>
<td>5.8 (1.3)</td>
</tr>
<tr>
<td>FibroTest score ≥0.75, no. (%)</td>
<td>31/280 (11)</td>
<td>20/139 (14)</td>
</tr>
<tr>
<td>Previous nucleos(t)ide therapy, no. (%)</td>
<td>60 (21)</td>
<td>31 (22)</td>
</tr>
<tr>
<td>Previous interferon therapy, no. (%)</td>
<td>29 (10)</td>
<td>19 (14)</td>
</tr>
</tbody>
</table>

Tenofovir AF vs Tenofovir DF for HBeAg-Negative Study 108: Results at Week 48

*Using normal ranges of ≤30 U/L for men and ≤19 U/L for women

Tenofovir AF vs Tenofovir DF for HBeAg-Negative Study 108: Adverse Effects

Week 48 Changes in Bone Mineral Density (BMD)

<table>
<thead>
<tr>
<th></th>
<th>Hip</th>
<th>Spine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tenofovir alafenamide</td>
<td>-0.29</td>
<td>-0.88</td>
</tr>
<tr>
<td>Tenofovir DF</td>
<td>-2.16</td>
<td>-2.51</td>
</tr>
</tbody>
</table>

Tenofovir AF vs Tenofovir DF for HBeAg-Negative Study 108: Adverse Effects

Week 48 Changes in Bone Mineral Density (BMD)

**Interpretation:** “In patients with HBeAg-negative chronic HBV, the efficacy of tenofovir alafenamide was non-inferior to that of tenofovir disoproxil fumarate, and had improved bone and renal effects. Longer term follow-up is needed to better understand the clinical impact of these changes.”
Tenofovir AF vs Tenofovir DF in HBeAg-Positive Study 110
Tenofovir AF vs Tenofovir DF for HBeAg-Positive Study 110: Design

• **Background**
  - Randomized double-blind placebo-controlled non-inferiority trial of tenofovir alafenamide (TAF) versus tenofovir disoproxil fumarate (TDF) in HBeAg-positive chronic hepatitis B patients

• **Subjects**
  - N = 1473 with chronic hepatitis B eAg-positive infection
  - HBV DNA level >20,000 IU/mL
  - ALT >60 IU/L in men, >38 IU/L in women; <10 x ULN for both

• **Regimens**
  - Tenofovir AF 25 mg once daily with matching placebo
  - Tenofovir DF 300 mg once daily with matching placebo

• **Study End-Point**
  - HBV DNA level <29 IU/mL at week 48

**Tenofovir AF vs Tenofovir DF for HBeAg-Positive**

**Study 110: Design**

**Study Participants**
- HBeAg-positive
- HBV DNA level >20,000 IU/mL
- ALT >60 IU/L for men
- ALT >38 IU/L for women
- CrCl>50 ml/min

**Time 0**
- Randomized 2:1

**Week 48**
- Analysis

**Week 96**
- Analysis

**Tenofovir alafenamide:** 25 mg/day  
  (n = 581)

**Tenofovir DF:** 300 mg/day  
  (n = 292)**

## Tenofovir AF vs Tenofovir DF for HBeAg-Positive Study 110: Baseline Characteristics

<table>
<thead>
<tr>
<th>Baseline Characteristic</th>
<th>Tenofovir AF (n = 581)</th>
<th>Tenofovir DF (n = 292)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, mean (±SD), years</td>
<td>38 (11)</td>
<td>38 (12)</td>
</tr>
<tr>
<td>Male, no. (%)</td>
<td>371 (64)</td>
<td>189 (65)</td>
</tr>
<tr>
<td>Race, no. (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td>482 (83)</td>
<td>232 (79)</td>
</tr>
<tr>
<td>White</td>
<td>96 (17)</td>
<td>53 (18)</td>
</tr>
<tr>
<td>Other</td>
<td>3 (1)</td>
<td>7 (2)</td>
</tr>
<tr>
<td>ALT &gt; ULN by central lab, no. (%)</td>
<td>537 (98)</td>
<td>288 (99)</td>
</tr>
<tr>
<td>HBV DNA, log_{10} IU/mL (±SD)</td>
<td>7.6 (1.3)</td>
<td>7.6 (1.4)</td>
</tr>
<tr>
<td>FibroTest score, mean (±SD)</td>
<td>0.34 (0.23)</td>
<td>0.32 (0.22)</td>
</tr>
<tr>
<td>Cirrhosis, no. (%)</td>
<td>41 (7)</td>
<td>24 (8)</td>
</tr>
<tr>
<td>Serum creatinine, mean (±SD)</td>
<td>0.81 (0.17)</td>
<td>0.82 (0.16)</td>
</tr>
</tbody>
</table>

Tenofovir AF vs Tenofovir DF for HBeAg-Positive Study 110: Results at Week 48

*Using normal ranges of ≤30 U/L for men and ≤19 U/L for women

Tenofovir AF vs Tenofovir DF for HBeAg-Positive Study 110: Adverse Effects

Week 48 Changes in Bone Mineral Density (BMD)

**Interpretation:** “In patients with HBeAg-positive HBV infection, tenofovir alafenamide was non-inferior to tenofovir disoproxil fumarate, and had improved bone and renal effects. Longer term follow-up is needed to better understand the clinical impact of these changes.”