Early initiation of HIV therapy is recommended worldwide and is associated with improved morbidity and mortality as well as better immunologic recovery and lower chance of virologic failure with drug resistance. However, many patients still present late in the course of disease with high HIV-1 viral load and low CD4 counts.

- Concomitant bictegravir/tenofovir/abacavir (FTC/tenofovir/TPV) and elvitegravir/cobicistat/emtricitabine/tenofovir alafenamide (B/F/TAF, Biktarvy) were considered as the preferred regimen.

Randomisation for each study was stratified by the following:

- Age
- Sex
- Race/ethnicity
- Median CD4 cell count (<200 cells/µL, ≥200 cells/µL, ≥500 cells/µL, ≥1,000 cells/µL)
- Baseline HIV-1 RNA (mean ≥100,000 copies/mL, ≥50,000 copies/mL, ≥1,000 copies/mL, <50 copies/mL, missing analysis)
- Region (US vs non-US)
- Adapted and approved entry criteria
- Exclusion criteria

Methods

Study Design

Studies 1489 and 1490: B/F/TAF vs DTG-containing Regimens in Treatment-Naïve Adults

- Study 1489
  - Phase 3, Randomised, Controlled Clinical Trials: Week 96 Results
  - Purpose: To compare the efficacy and safety of bикатвари (B/F/TAF, Biktarvy) vs. dolutegravir (DTG) + elvitegravir/cobicistat/emtricitabine/tenofovir alafenamide (F/TAF, Truvada) or dolutegravir (DTG) + emtricitabine/tenofovir (FTC/tenofovir) as first-line, antiretroviral therapy in HIV-1–infected, treatment-naïve adults.

- Study 1490
  - Phase 4, Randomised, Controlled Clinical Trials: Week 96 Results
  - Purpose: To evaluate the long-term safety, tolerability, and efficacy of B/F/TAF in treatment-naïve adults with a high baseline HIV-1 viral load ranging from 100 copies/mL to 100,000 copies/mL.

Inclusion Criteria

- Adults aged ≥18 years who were treatment-naïve
- CD4 count <200 cells/µL
- Baseline HIV-1 RNA >100,000 copies/mL

Exclusion Criteria

- Participants with active or recent (≤6 months) opportunistic infection
- Participants with active or recent (≤6 months) malignancy
- Participants with uncontrolled or severe underlying medical condition
- Participants with uncontrolled alcohol or substance use disorder
- Participants with a history of non-compliance with antiretroviral therapy
- Participants with a history of treatment-emergent drug resistance
- Participants with a history of non-compliance with medication
- Participants with a current or past history of substance use disorder
- Participants with a current or past history of HIV-1 drug resistance
- Participants with a current or past history of non-compliance with medication
- Participants with a current or past history of treatment-emergent drug resistance

Outcomes

- Primary endpoint: Proportion of participants with HIV-1 RNA <50 copies/mL at Week 96
- Secondary endpoints: Proportion of participants with HIV-1 RNA <50 copies/mL at Week 4, CD4 cell count increase ≥10% from baseline, and treatment response in participants with high baseline HIV-1 viral load.

Results

Pooling Baseline Characteristics

- Study 1489: n=325
- Study 1490: n=634

- Median age (range) 35 (18–71)
- Male 80% (93/116)
- Race/ethnicity
  - Hispanic/Latino 26% (22/83)
  - Asian 13% (13/100)
- Baseline HIV-1 RNA
  - Median (Q1, Q3) 4.62 (4.28–4.95)
  - busted 68% (21/31)
- Median CD4 cell count (cells/µL)
  - Baseline 120 (79, 185)
  - Time point 420 (250, 570)
- Median (Q1, Q3) 24% (19, 32)
- Median (Q1, Q3) 121 (76, 165)

Mean Change From Baseline in HIV-1 RNA at Week 4

- Baseline HIV-1 RNA >100,000 copies/mL
- Median change from baseline: −4.45 (4.03, 4.84)
- Statistical significance: p=0.14

Virologic Outcome at Week 96

- FDA Snapshot Analysis FAS (9, 10, 11)
- Median change from baseline: −4.51 (4.04, 4.87)
- Statistical significance: p=0.85

- All arms showed rapid suppression of viremia, with the majority of participants <50 copies/mL by Week 4.
- Virologic response rates by visit were also rapid and similar to treatment arms with high baseline VL.

Conclusions

- At Week 96 in each study:
  - Treatment responses were similar among participants treated with B/F/TAF and DTG comparators regardless of HIV-1 RNA or CD4 count at baseline.
  - No participant failed with treatment-emergent resistance.
  - Pooled analyses at Week 96 in the FAS showed:
    - Rapid rates of virologic decline in B/F/TAF-treated participants, with similar findings in DTG-based comparator arms.
    - Mean changes from baseline in HIV-1 RNA at Week 4 were similar between the B/F/TAF and DTG comparator arms in participants with high baseline HIV-1 viral load.

- In the pooled per-protocol analysis at Week 96:
  - 100% of participants treated with B/F/TAF had HIV-1 RNA <50 copies/mL regardless of high viral load, low CD4 count, or having both high viral load and low CD4 count.

- These data support the use of B/F/TAF in patients presenting with high viral load and low CD4 counts.

References:


Acknowledgments:

We extend our thanks to the participants and their families. These studies were funded by Gilead Sciences, Inc.