Differential Pain Severity Across Different Antiretroviral Treatments

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Abstract

- Chronic pain is a prevalent and multifaceted condition affecting people living with HIV and may be influenced by Highly Active Antiretroviral Therapy (HAART). This study analyzed the relationship between self-reported pain severity and specific antiretroviral drug regimens to evaluate potential associations between HAART and chronic pain. Pain ratings, measured on a 0–5 scale (0 = no pain, 5 = very severe pain), were compared across HAART prescriptions, which included nucleoside reverse transcriptase inhibitors (NRTIs), integrase strand transfer inhibitors (INSTIs), non-nucleoside reverse transcriptase inhibitors (NNRTIs), and protease inhibitors (PIs). Mean pain scores were calculated for each regimen, and correlation analysis was conducted to identify potential trends. Findings indicated that individuals taking Biktarvy, the most frequently prescribed regimen, reported an average pain severity of 4.15 (±0.95). The highest mean pain ratings (5.0) were observed among participants on Cabenuva, Delstrigo, and Symtuza, though these values were derived from limited data points. Dovato and Descovy showed mean pain scores of 4.33 and 4.0, respectively. Correlation analysis demonstrated weak negative associations between pain severity and the presence of NRTIs (-0.18) and INSTIs (-0.13), suggesting a slight reduction in pain perception. Conversely, weak positive associations were found for NNRTIs (+0.24) and PIs (+0.13), indicating a possible link to increased pain levels. While these correlations were minimal, they suggest that different HAART regimens may variably influence pain perception. Additional studies employing regression modeling and larger cohorts are needed to establish clinical relevance. Understanding these patterns may facilitate optimization of treatment strategies that minimize pain while maintaining effective HIV control, with the goal to ultimately enhance patient outcomes.

Introduction

Differential HAART regimens are associated with higher self-reported pain ratings in HIV positive individuals.

Methodology

- An observational cross-sectional study using self-reported data
- 113 participants in a phone screening survey self-reported pain ratings (0 = no pain, 5 = very severe pain) and current HAART regimen with specific drugs taken.
- Mean pain ratings were calculated for each brand
- Correlation analysis was performed to analyze trends between reported pain and HAART regimen

Results

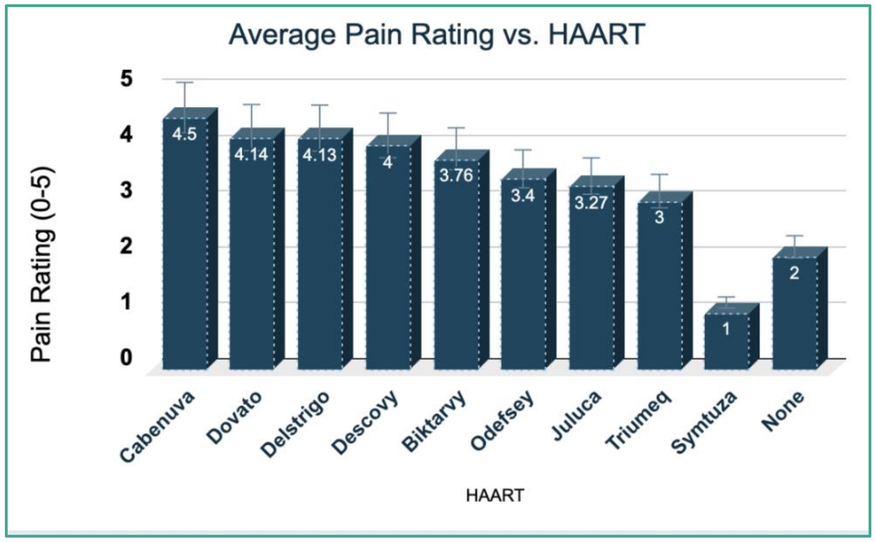

Figure 1: Average pain ratings (0-5 scale) by HAART regimen among 113 participants. Cabenuva, Dovato, Delstrigo and Descovy had the highest pain ratings (≥4), while Biktarvy, Odefsey, Juluca, Triumeq, and Symtuza showed lower pain ratings (3-3.99). Error bars represent standard deviations to account for variability in pain amongst taking each regimen.

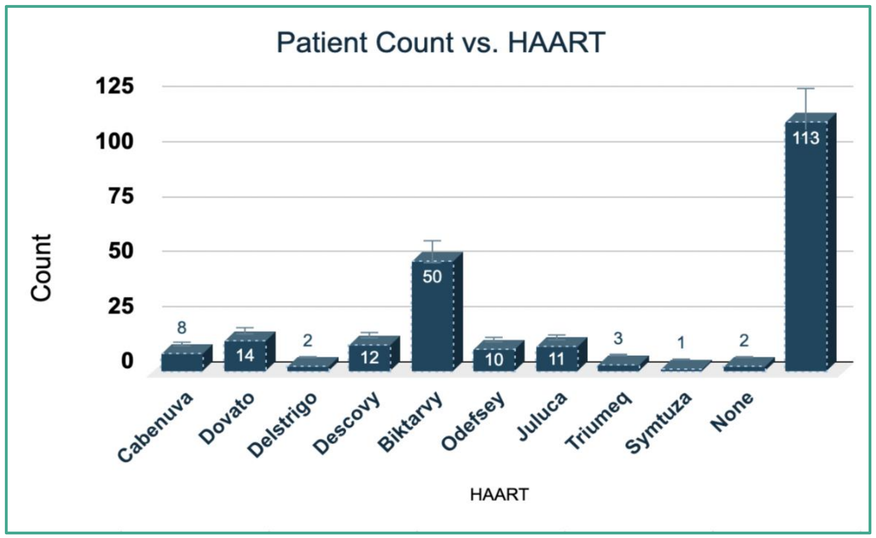

Figure 2: Patient distribution by HAART regimen among 113 participants. Biktarvy is the most used regimen (50), followed by Dovato (14), Descovy (12), Juluca (11), Odefsey (10), Cabenuva (8), Triumeq (3), Delstrigo (2), and Symtuza (1). 2 participants are not on HAART.

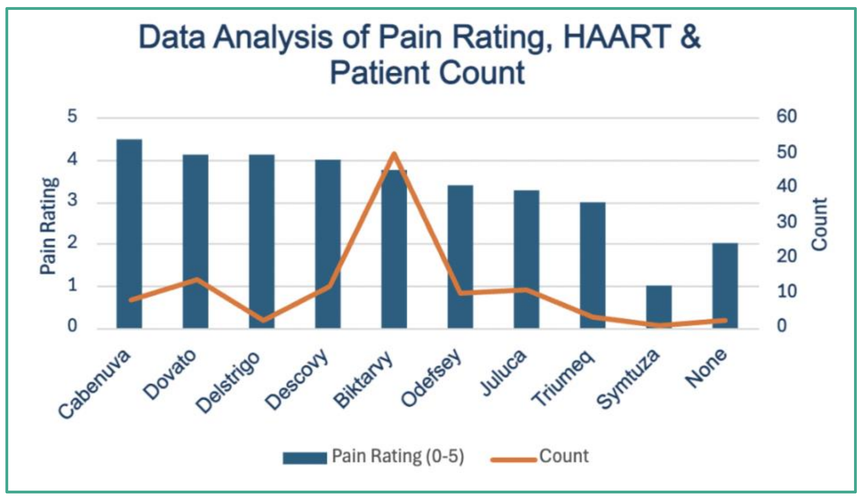

Figure 3: Patient distribution and average pain ratings by HAART regimen among 113 participants. Biktarvy, the most used regimen (50), has a moderate pain rating of 3.76, Cabenuva (8) reports the highest pain rating (4.5), while Symtuza (1) shows the lowest (1.0). Regimens with moderate usage, Dovato (14 participants, 4.14 rating) and Descovy (12 participants, 4.0 pain), displayed mid-range pain ratings. Participants not on HAART (2) reported an average rating of 2.0. The variability in pain ratings displays differences in individual pain tolerance and potential drug side effects.

Conclusion

The data collected and presented highlights variations in pain among HIV positive individuals with differing HAART regimens. Cabenuva, with a smaller participant sample, exhibited the highest average pain rating, while Biktarvy, the most commonly used regimen from the sample, showed a moderate pain rating. The findings display the wide variation in pain sensation across individuals, possibly due to the varying side effect profiles of each regimen in addition to different individual pain tolerance in each participant. The variability seen in this study highlights the necessity of individualized treatment plans and close monitoring of side effects to enhance patient comfort and optimize adherence to therapy. From the data collected, on average, INSTIs tend to have higher pain ratings than NRTIs and PIs, however, more data is needed to establish statistical significance. Although the sample is small, the differences in pain across each regimen suggests further investigation may be worthwhile.