

# Evaluation of Alcohol Tolerance in HIV Pre-exposure Prophylaxis Patients

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## BACKGROUND

- Pre-exposure prophylaxis (PrEP) is a treatment used to prevent high-risk individuals from contracting HIV.
- Medications used for PrEP include Truvada (emtricitabine + tenofovir disoproxil fumarate) and Descovy (emtricitabine + tenofovir alafenamide).
- Tenofovir alafenamide (TAF) requires lower doses than the original tenofovir disoproxil fumarate (TDF). It offers the same clinical efficacy as TDF but with potential improvements in tolerability due to reduced off-target drug exposure.
- Patients from the Petersen HIV Clinic have reported a lower tolerance to alcohol while taking these PrEP medications. This has not been reported in clinical trials and the prevalence of this side effect elsewhere is unknown.

## OBJECTIVE

- This study aims to determine if two HIV pre-exposure prophylactic medications, Truvada and Descovy, decrease alcohol tolerance in PrEP patients.

## METHODS

- **Study design:** This prospective observational study was approved by the University of Arizona Institutional Review Board and included Peterson HIV Clinic patients from September 12, 2022 to March 31, 2023.
- We included PrEP patients aged 21-68 years old that started Truvada or Descovy within the last year.
- We excluded patients that are using on-demand PrEP or injectable cabotegravir.
- **Data Collection:** Patients were asked to participate in our study and to complete a survey during their regular follow-up visit at the HIV clinic.
- **Data Analysis:** A chi-square test and Wilcoxon signed rank test were used to measure a change in alcohol tolerance after initiating PrEP.

## RESULTS

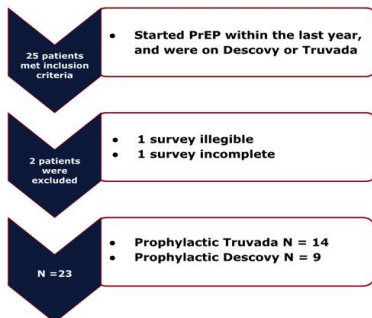


Figure 1: Patients included

	# of patients that reported a decrease in alcohol tolerance	# of patients that did not report a decrease in alcohol tolerance	P-value
Observed	4	19	0.697
Expected	3.304	19.696	

Figure 2: Chi-Square test. Alpha = 0.05

	N	Mean Rank	Sum of Ranks
Negative Ranks	3	5.83	17.5
Positive Ranks	4	2.63	10.5
Paired Zeros			16
Total Sample Size			23
Critical Value			2
Test Statistic			10.5

Figure 3: Wilcoxon signed rank test. The negative ranks represent the surveys reporting an increase in alcohol tolerance. The critical value that corresponds to an effective sample size of 7 and our test statistic is 2. This was determined by Wilcoxon signed rank critical value table.

## DISCUSSION

- There is not sufficient evidence to say PrEP medications have a significant effect on alcohol tolerance.
- Our surveys resulted in a relatively large number of paired differences equal to zero. This reduced our effective sample size to 7, undermining the reliability of comparable means testing.
- Limitations to our study include a small sample size and a subjective reporting system.
- Several of our patients do not drink alcohol consistently. Additional studies exploring tolerance in patients with established alcoholism may result in more reliable data.

## CONCLUSION

- There is no significant association between taking HIV pre-exposure prophylaxis and decreased alcohol tolerance.

## REFERENCES

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