Uptake and Completion of Weekly Isoniazid with Rifapentine and Isoniazid (3HP) vs. Isoniazid Preventive Therapy (6H) among People With HIV in western Kenya

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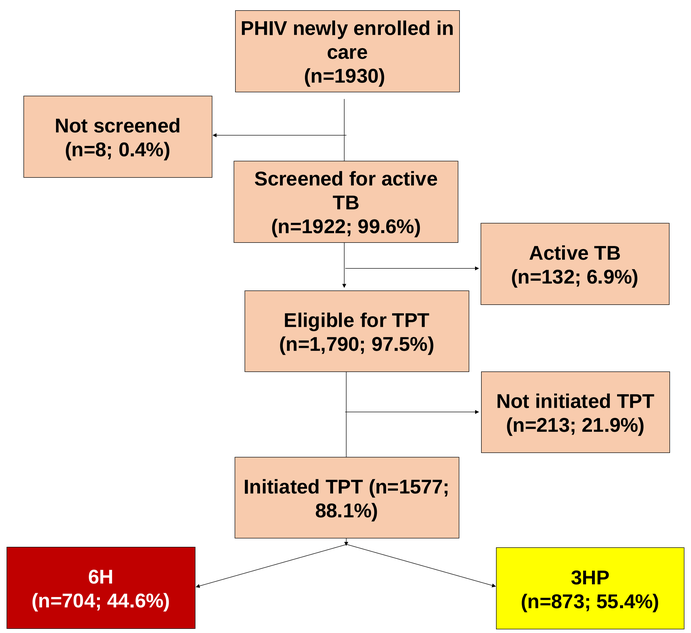
Background

- 1.7 billion infected with *Mycobacterium tuberculosis* globally
  - Risk of TB in people with HIV (PHIV) – 5%-10% per year
  - TB preventive therapy (TPT) reduces risk of TB by ~60%
- 6 months INH (6H) - poor uptake, adherence and completion
  - Uptake - SSA (60%-90%); Completion <90%
- Shorter regimens, such as three months of weekly isoniazid with rifapentine (3HP), could substantially improve uptake, adherence & completion
- Kenya implemented 3HP for 15+ PHIV in 2022
- Real world data are limited on impact of short-course regimens

Methods

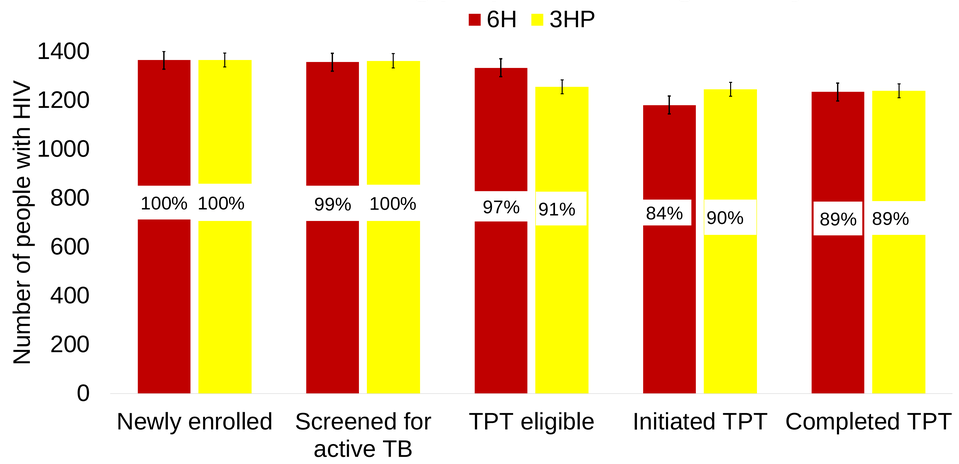
- **Design:** Retrospective chart review (Jan 2022 to Jun 2023)
  - **Site**: 7 HIV clinics in Kisumu County (HIV prev: 17.5%)
  - **Study Participants**: Newly enrolled PHIV (≥15 years)
  - **Data Abstraction**: socio-demographics, clinical data (WHO stage, viral load, ART), TPT eligibility, initiation, and outcomes
- **Data Analysis:** Completion of TPT cascade steps (6H [Jan-Sept 2022] vs. 3HP [Oct 2022 to Jun 2023]) – proportions (95% CIs)
  - TPT outcomes compared (6H vs. 3HP) using X^2 tests
  - Correlates of non-initiation vs. non-completion: Poisson regression with generalized linear models
  - Multivariate models – correlates with p ≤ 0.1 in univariate

Overview of participants



- **TPT initiation was significantly higher with 3HP than 6H.**
- **12-month mortality significantly higher among PHIV who never initiated or didn't completed TPT vs. TPT completion.**
- **Advanced HIV disease (AHD) was associated with non-completion of both regimens.**

3HP vs. 6H among people with HIV aged ≥15 years*



Steps of the tuberculosis preventive therapy cascade
*% of previous step

TPT initiation was significantly higher with 3HP than 6H period (90% vs. 84%; p<0.001); discontinuation due to adverse events and completion were similar for both regimens.

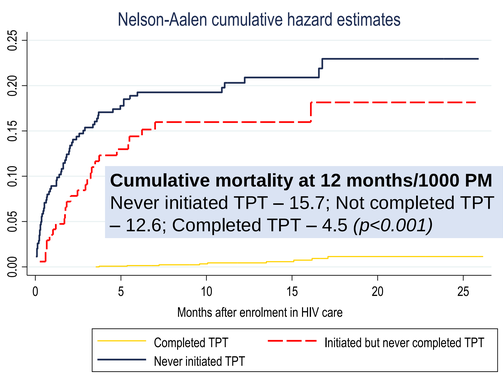
Socio-demographic & clinical characteristics

Characteristic	Number (%)
Median age (IQR)	33 (27-41)
Sex	
Male	661 (34.2)
Female	1269 (65.8)
Highest level of education	
Primary & below	503 (30.0)
Secondary & above	1171 (70.0)
Occupation	
Formal employment	236 (13.6)
Informal employment	1120 (64.3)
Unemployed/student	385 (22.2)

HIV treatment outcomes:
- Alive & active on ART – 80.1% (1545)
- Transferred out – 6.1% (118)
- Loss to follow up – 8.3% (161)
- Death – 5.5% (106)

WHO stage at enrolment
- Stage 1/2 - 81% (n=1546)
- Stage 3/4 [AHD] - 19% (n=374)

Viral suppression within 6 months of enrolment (N=1174)
- Median viral load – 50 copies/milliliter (IQR: 0 - 461,000)
- Supressed – 90.2% (n=1059)



Cumulative mortality at 12 months/1000 PM
Never initiated TPT – 15.7; Not completed TPT – 12.6; Completed TPT – 4.5 *(p<0.001)*

Correlates for non-initiation of TPT

Correlate	Adjusted Risk ratio (95% CI)	p-value
Educational level		
Primary and below	2.2 (1.6-2.9)	<0.001
Secondary	1.5 (0.9-2.5)	0.095
Tertiary	Ref	
WHO Stage		
Stage 1/2	Ref	
Stage 3/4 (AHD)*	2.1 (1.4-2.9)	<0.001
Facility type		
Non-referral hospitals	Ref	
Large referral hospitals	1.7 (1.3-2.3)	0.001

*AHD – advanced HIV disease

Correlates for non-completion of 6H & 3HP

	Six-month regimen (6H)		*Three-month regimen (3HP)*	
Correlate	**Adjusted Risk ratio* (95% CI)**	**p-value**	**Adjusted Risk ratio* (95% CI)**	**p-value**
WHO stage				
Stage 1/2	Ref		Ref	
Stage 3/4 (AHD)	4.9 (1.9-12.5)	<0.001	2.4 (1.1-5.4)	0.04
Employment				
Informal	-		Ref	
Formal	-		2.4 (1.1-5.2)	0.02

*AHD – advanced HIV disease

CONCLUSIONS

- 3HP implementation significantly increased TPT initiation.
- Completion rates were high and adverse events leading to discontinuation were low and similar for 3HP and 6H.
- TPT non-completion was substantially higher among PHIV with AHD for both regimens.
- 3HP non-initiation and non-completion was associated with:
  - ✓ Advanced HIV disease
  - ✓ Formal employment
- Interventions are needed to support treatment completion among PHIV with AHD and referral facilities

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