CROI 2020 Update: HIV Prevention

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Disclosures

- I attended Gilead’s 2018 U.S. Latinx/Hispanic PrEP Advisory Program.
- Only FTC/TDF and now FTC/TAF are approved by the FDA and only for use as daily PrEP in some but not all populations.
HIV prevention at CROI

#93: Resistance following PrEP start in AHI
#140: Challenges of diagnosis HIV in PrEP
#91: Urine TDF testing
#987: Non-daily use of meds among PrEP users
#1131: Impact of PrEP and TasP on epidemic
#1005: PrEP “equity index”
Initiating PrEP during acute HIV infection: What is the risk for ARV drug resistance?

Thai Red Cross – all PrEP starts tested by pooled qualitative NAT 7 (0.3%)
AHI in 2442 PrEP starts
  5 identified by pooled NAT
  2 neg pool but Ab+ at 1 mo (baseline VL<100 copies)

Drug resistance
  3/7 had M184I or M184V (0/229 in AHI cohort)
  4/7 had no FTC resistance despite PrEP 2-15 days
  0/7 TDF
  1/7 NNRTI mutation (E138A)
  0/7 PI

Since 2019, 3 drugs x 30days then Ab test if any high risk behavior in last 30 days

Colby et al, RV254/SEARCH010, #93
Diagnostic and therapeutic challenges arise with early HIV infection on PrEP

UCSF Treat Acute HIV Study
Of 11 (19%) of 58 had “HIV/PrEP overlap” within last 10d
5 AHI at PrEP start, 6 acquired HIV while “on PrEP”

3 cases described
#1: AHI at PrEP start with WT virus, M184I at d7
#3: PrEP as PEP
#2: PrEP “overwhelmed”
Near-perfect accuracy of a real-time urine tenofovir test compared to lab-based ELISA

Samples from:
Partners PrEP
n=454 samples from 297 participants

iBrEATHe
n=231 samples from 46 transgender men/women

Comparator: ELISA with LOD 1000 ng/mL
Planned cut-off for LFA 1500 ng/mL =
>98% positive if dose within 24 hours and
>98% negative if no dose within 120 hours
(Gandhi JAIDS 2019)

Spinelli et al, #91. Please also see #977
Near-perfect accuracy of a real-time urine tenofovir test compared to lab-based ELISA

Sensitivity 505/505 = 100%
Specificity 176/179 = 98.3%
Accuracy 99.6%

Spinelli et al, #91. Please also see #977
Nondaily use of HIV preexposure prophylaxis in a large online sample in the US

9697 MSM recruited for online survey from sexual networking sites. Of 33% who reported PrEP w/i 6 mo, 176 (5%) reported non-daily use.

### Examples of non-daily PrEP regimens

<table>
<thead>
<tr>
<th>Regimen</th>
<th>Percentage</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Only around time of sex</td>
<td>48%</td>
<td>2-1-1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>One pill day before and one day after sex</td>
</tr>
<tr>
<td></td>
<td></td>
<td>One pill day of sex</td>
</tr>
<tr>
<td>On a regular schedule</td>
<td>24%</td>
<td>T &amp; S (Tu, Th, Sat, Sun)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Every other day</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fridays and Saturdays</td>
</tr>
<tr>
<td>For a few weeks at a time</td>
<td>19%</td>
<td>On vacations</td>
</tr>
<tr>
<td>Other non-daily regimens</td>
<td>8%</td>
<td>Daily when expecting sex, o/w QOD</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Whenever I remember</td>
</tr>
</tbody>
</table>

Conclusion: US public health authorities need to provide clear guidance on effective non-daily PrEP dosing for MSM

Sewell et al, #987
Impact of PrEP and TasP on incidence of HIV diagnoses in 48 highest-burden US areas

48 Highest Burden Counties, 7 States, and Washington, DC

- Priority US counties, Washington, DC, and San Juan, Puerto Rico
- Priority states

Mera Giler et al, #1131
Impact of PrEP and TasP on incidence of HIV diagnoses in 48 highest-burden US areas

PrEP use by 17.4/100 persons at risk = ↓15.5% incidence

Mera Giler et al, #1131
Development of a PrEP equity index to set local targets for PrEP coverage

Disparities driven by inequities in access and HIV burden

Objective: develop a “PrEP equity index” to quantify inequities in PrEP and conceptualize PrEP targets for NYC

Methods:

PrEP coverage = \[\text{use (sexual health survey or NHBS)} \]
\[\text{need (diagnosis by race/ethnicity)} \]

PrEP equity index = \[\frac{\text{PrEP coverage for White MSM}}{\text{coverage for Black/Latino MSM}} \]

Results: PrEP equity index = Black 1.7-3.9, Latinx 2.3-3.3

Targeted increase: Black 65-295%, Latinx 131-235%
Questions?
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