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DISCORDANT SYPHILIS ANTIBODY TESTING AND HIV RISK IN THE BRONX, NEW YORK

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BACKGROUND

A discordant syphilis antibody profile is a positive initial treponemal test, negative nontreponemal test, and positive confirmatory treponemal test

Etiologies for a discordant profile include:

- previously treated syphilis
- untreated late latent syphilis
- early primary syphilis with or without the prozone phenomenon

Active HIV risk associated with a discordant syphilis antibody profile is unknown

Among a cohort of individuals with a discordant syphilis profile, we estimated the proportions attributable to the various etiologies and assessed for the presence of active HIV risk

METHODS

Using the Einstein-Rockefeller-CUNY Center for AIDS Research Clinical Cohort Database, we identified all outpatients >18, with a discordant syphilis profile from January-June 2018 at Montefiore Health System:

- Likely etiology was determined from chart review (where chart review was unrevealing, classification was "inadequately assessed")
- Among those without HIV, active HIV risk was assumed if 1) prescribed PrEP, 2) had early syphilis, or 3) had gonorrhea or chlamydia (GC/CT) within 3 years

Table: Characteristics of Adults with Discordant Syphilis Antibody Profile from January 1 through June 30, 2018 in Montefiore Health System

	PWH[1] (N= 438)	On PrEP[2] (N= 60)	No PrEP[3] (N= 462)
Age, median (range), y	51 (20-82)	30 (20-78)	55 (18-92)
Age group, y			
18-44	150 (34.2%)	48 (80.0%)	84 (18.2%)
45-59	194 (44.3%)	10 (16.7%)	205 (44.4%)
≥60	94 (21.5%)	2 (3.3%)	173 (34.4%)
Sex			
Female	101 (23.1%)	2 (3.3%)	286 (61.9%)
Male	337 (76.9%)	58 (96.7%)	176 (38.1%)
Etiology of discordant syphilis antibody profile			
Prozone	3 (0.7%)	0 (0.0%)	2 (0.4%)
Late latent	9 (2.1%)	1 (1.7%)	87 (18.8%)
Treated	421 (96.1%)	58 (96.7%)	319 (69.0%)
Inadequately assessed	5 (1.1%)	1 (1.7%)	54 (11.7%)
Gonorrhea or Chlamydia within 3 y	96 (21.9%)	17 (28.3%)	16 (3.4%)

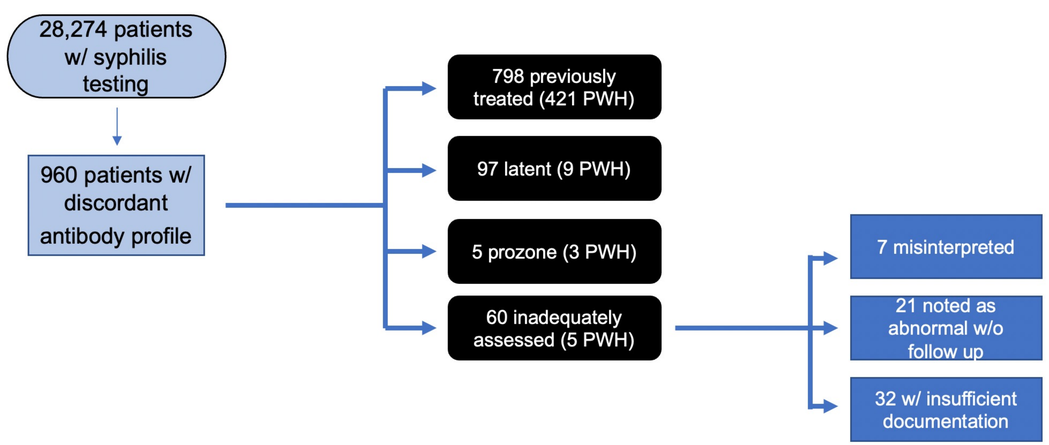
1 – People with confirmed HIV
2 – People without HIV but prescribed PrEP during the study period
3 – People without HIV or with unknown HIV status and not on PrEP

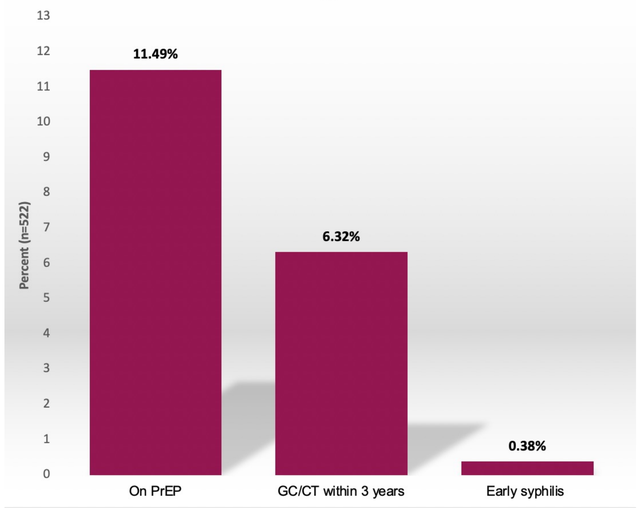
Among the people without HIV with **discordant syphilis antibody profiles** in our cohort, around 15% had active HIV risk. Interpretation of syphilis antibody testing is challenging, and **misinterpretation** continues to occur.

RESULTS

Among 28,274 unique patients with syphilis testing in the study period:

- 960 (3.4%) had a discordant syphilis antibody profile, including 522 without HIV
- Among those without HIV, 77 (14.7%) had active HIV risk
  - Among those without HIV, 60 were on PrEP, including 17 (28.3%) with GC/CT within 3 years
  - Of the 462 without HIV not on PrEP, 2 (0.4%) had early syphilis and 16 (3.7%) had GC/CT within 3 years





CONCLUSIONS

- To our knowledge this is the first detailed description of individuals with discordant syphilis antibody testing that describes active HIV risk
- While the vast majority were presumed to have resolved syphilis infection, 14.7% of those without HIV had active HIV risk
- This suggests providers should counsel individuals with discordant syphilis testing about HIV risk and consider PrEP
- That 55 (10.5%) of those without HIV were inadequately assessed demonstrates the complexity of interpretation of syphilis results
- Whether misinterpretation of syphilis results impacts provider recognition of HIV risk should be studied

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