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HPV Prevalence at Multiple Anatomical Sites among Transgender People: the PrevHPV-TG ANRS Study

Valentine M. Ferré[1,2], Mélanie Bertine[1,2], Aline-Marie Florence[1,3], Romane Guilbaud[1,2], Margot Bucau[4], Isabelle Gorenne[3], Maite Blanc[5], Valentina Isernia[5], Minerva Cervantes[5], Anais Chassac[4], Anne Couverlard[4], Florence Michard[5], Charlotte Charpentier[1,2], Jade Ghosn[1,5]

Author Contact Information : jade.ghosn@aphp.fr

AFFILIATIONS

1 - Université Paris Cité, INSERM, UMR_1137, IAME, AP-HP, Paris, France
2 - Virology department, Hôpital Bichat-Claude Bernard, AP-HP, Paris, France
3 – Epidemiology, biostatistics and clicnical research department, Hôpital Bichat-Claude Bernard, AP-HP, Paris, France
4 – Pathology department, Hôpital Bichat-Claude Bernard, AP-HP, Paris, France
5 – Infectious diseases department, Hôpital Bichat-Claude Bernard, AP-HP, Paris, France

BACKGROUND

- **Transgender people assigned male at birth (TG-AMAB) are at high risk for sexually transmitted infection (STIs)**
- TG-AMAB face significant barriers to accessing STI screening, including stigma, discrimination, and gender insensitivity in healthcare settings, which can lead to avoidance or delay of testing
- Structural barriers such as lack of provider knowledge, denial of services, and trauma from prior healthcare experiences contribute to missed opportunities for STI screening
- Engagement in sex work and transactional sex is disproportionately high among TG-AMAB and can be an added risk factor for more frequent STIs
- TG-AMAB have higher rates of anal human papillomavirus (HPV) infections and anal cancer compared with cisgender populations
- Few data are available regarding concomitant HPV infections at anal, genital and oral sites in this population

Objective

The ANRS PrevHPV-TG study is a monocentric cross-sectional study in which we assessed STIs prevalence among a TG-AMAB population attending our hospital infectious diseases department either for HIV infection follow-up of for PrEP and STI screening.

METHODS

- Prior HPV vaccination was en exclusion criteria.
- Participants were asked to complete a questionnaire about their sexual activity, living conditions, and tobacco, drug, and alcohol use
- For TG-AMAB living with HIV (TGWH) immunovirological history of infection was recorded, HIV-viral load and CD4 T-cell count measured.
- A screening for Syphilis (serology), *Neisseria gonorrhoeae* (NG) and *Chlamydia trachomatis* (CT) (anal self-sampling, urine and throat) was proposed to all participants if not done in the last 3 months
- HPV-infection screening at 3 anatomical sites was performed at inclusion with anal self-sampling discharged in cytology medium, oral gargle and genital swab
- Herpes simplex virus detection was also performed on the anal sample collected at inclusion.

RESULTS

Patients' characteristics

Overall, 196 TG-AMAB were included. Their median age was 44 years-old (IQR=37.5-50). Their socio-demographic characteristics are depicted in **Table 1**.

A significant part of the participants displayed indications of vulnerability:

- More than half of them did not benefit from the general social security system
- Almost 20% were either staying with a friend, in a shelter, or were homeless
- 41% didn't work at least one day in the month before inclusion
- 60% had been engaged in transactional sex during the past 12 months.

Cross-sectional study of 196 transgender people assigned male at birth showed a high burden of bacterial STI and HR-HPV prevalence. Concomitant HR-HPV infections more common in anal-oral pairs; Nonavalent HPV vaccination in this population would have prevented HPV infections of at least one anatomical site in 72% of the participants.

HIV infection

All HIV-negative TG (n=38, 19.4%) were receiving PrEP.

Among the 158 (80.6%) TGWH, all were receiving antiretroviral treatment, 90.5% had undetectable HIV viral load and 98.1% had ≥ 200 CD4 T-cells/mm³.

	Participants with available data (n)	Total	HIV-negative TG-AMAB	TGWHIV
Age (years, median [IQR])	196	44.0 [37.5-50.0]	39.0 [33.0-44.0]	45.0 [38.0-51.0]
Body Mass Index	196	27.2 [24.9-30.1]	26.1 [24.3-29.1]	27.3 [25.0-30.1]
Sex reassignment surgery	185	26 (14.1%)	2 (6.5%)	24 (15.6%)
Hormone treatment	196	33 (16.8%)	3 (7.9%)	30 (19.0%)
Health insurance	191			
General social security system		93 (48.7%)	11 (29.7%)	82 (53.2%)
Universal Health Coverage		29 (15.2%)	4 (10.8%)	25 (16.2%)
State Medical Assistance		58 (30.4%)	20 (54.1%)	38 (24.7%)
None		11 (5.8%)	2 (5.4%)	9 (5.8%)
Housing	188			
Own accomodation (owner or tenant)		147 (78.2%)	28 (84.8%)	119 (76.8%)
Staying with a relative/friend		24 (12.8%)	2 (6.1%)	22 (14.2%)
Hotel room / Reception center		5 (2.7%)	2 (6.1%)	3 (1.9%)
Homeless / Emergency accommodation / Temporary housing		8 (4.3%)	1 (3.0%)	7 (4.5%)
Other		4 (2.1%)	0 (0.0%)	4 (2.6%)
Study level	190			
Elementary school		48 (25.3%)	5 (13.5%)	43 (28.1%)
Secondary school (middle school, high school)		117 (61.6%)	25 (67.6%)	92 (60.1%)
Higher education (University)		25 (13.2%)	7 (18.9%)	18 (11.8%)
Worked at least one day during the month before inclusion	186	110 (59.1%)	27 (73.0%)	83 (55.7%)
Transactional sex in the last 12 months	196	106 (60.2%)	20 (64.5%)	86 (59.3%)
HBV vaccinaton	196	106 (54.1%)	30 (78.9%)	76 (48.1%)
Ongoing tobacco consumption	185	54 (29.2%)	9 (25.0%)	45 (30.2%)
Cannabis consumption in the last 4 weeks	171			
None		143 (83.6%)	22 (75.9%)	121 (85.2%)
< once a week		11 (6.4%)	3 (10.3%)	8 (5.6%)
More than once a week		17 (4.1%)	4 (0.0%)	13 (4.9%)
Consumption of other drugs in the last 4 weeks	176	42 (23.9%)	4 (12.1%)	38 (26.6%)
If yes, heroine consumption in the last 4 weeks	35	4 (11.4%)	0 (0.0%)	4 (15.4%)
If yes, cocaine consumption in the last 4 weeks	34	24 (70.6%)	1 (33.3%)	23 (74.2%)
If yes, other recreative drugs* consumption in the last 4 weeks	37	6 (16.2%)	0 (0.0%)	6 (17.6%)
Drug injection at least once in lifetime	167	23 (13.8%)	3 (9.7%)	20 (14.7%)

Table 1. Socio-demographic characteristics of participants

	Participants with available result (n)	Total (n, %)	Among TGWHIV (n, %)	Among HIV-negative TG-AMAB (n,%)
Recent STI (< 3 months)				
Active syphilis	177	44 (24.9%)	7 (20.0%)	37 (26.0%)
Neisseria gonorrhoeae infetion				
anal	175	12 (6.9%)	3 (8.5%)	9 (6.4%)
oral	180	9 (5.0%)	5 (13.9%)	4 (2.8%)
urine	185	1 (0.5%)	0 (0.0%)	1 (0.7%)
Chlamydiae trachomatis infection				
anal	177	16 (9.0%)	3 (9.0%)	13 (9.8%)
oral	186	1 (0.5%)	0 (0.0%)	1 (0.7%)
urine	189	2 (1.1%)	0 (0.0%)	2 (1.3%)
Herpes simplex anal infection	185	14 (7,6%)	9 (6.0%)	5 (13.9%)
STI in the past 12 months				
Active syphilis	195	47 (24.1%)	9 (23.7%)	38 (24.2%)
Neisseria gonorrhoeae infetion (any site)	187	21 (11.2%)	7 (18.9%)	14 (9.3%)
Chlamydiae trachomatis infection (any site)	189	20 (10.6%)	5 (13.9%)	15 (9.8%)
At least 1 STI among syphilis, CT and/or NG	190	75 (39.5%)	19 (51.4%)	56 (36.6%)

Table 2. Sexually transmitted infections (STI) diagnosed in participants in the 3 and 12 months before inclusion depending on HIV status

Other STI infections

STI burden was globally high in participants, especially for anal infections and independently of HIV status. Syphilis, CT and NG prevalences in the 3 and 12 months before inclusion and HSV positivity at inclusion are detailed in **Table 2.**

HPV infections

- HPV typing was successful for 185 anal swabs, 196 oral gargles and 155 genital swabs and valid results for all 3 samples were available for 151 TG
- 70% of anal swabs, 18% of gargles, and 5% of genital samples were positive for at least 1 high-risk HPV (HR-HPV), 12%, 2% and 2% for HPV16, respectively, with no difference depending on HIV status (**Fig1A**)
- Oral HR-HPV infections were observed concomitantly to anal HPV infection in 68% of cases with weak agreement regarding HPV type (Kappa=0.38) (**Fig1B**)
- Detection of concomitant infections with any HR-HPV was more common in anal-oral pairs (12%) than in anal-genital pairs (5%) or oral-genital pairs (1%)
- HR-HPV multi-infections were significantly more frequent in anal swabs than in gargles (p<0.001)
- On the 22 HPV16-positive anal samples, 45% had cytological lesions (6 ASC-US, 4 LSIL)
- Nonavalent HPV vaccination in this TG-AMAB population would have prevented HPV infections of at least one anatomical site in 72% of the participants

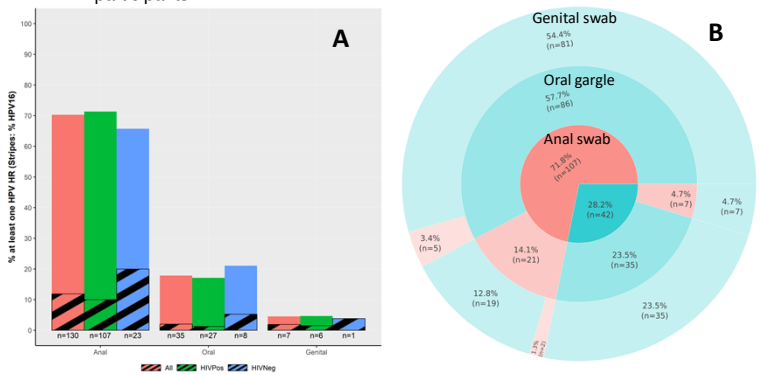


Figure 1. High-risk HPV (HR-HPV) infections in 198 transgender people assigned male at birth (TG-AMAB).
A) Prevalence of infection by at-least one HR-HPV (plain) or HPV16 (stripes) in the different anatomical sites (anus, oral site or genital site) overall and depending on TG-AMAB HIV status. **B)** Description of concomitant infections of different anatomical sites by at least one HR-HPV in 151 TG-AMAB individuals with a valid result for all three samples. In the centre is the result for the anal swab (red = positive for at least one HR-HPV; blue = negative). The second ring shows the results for the concomitant oral gargle (red = positive, blue = negative), and the outer ring shows the results for the concomitant genital swab (red = positive, blue = negative).

We found high level of HR-HPV in 3 anatomical sites (anal, genital and oral) among transgender women mostly engaged in transactional sex, nearly 75% of theses infections could have been prevented by nonavalent vaccine.

Diapositive 1

GB50 Les autres critères de non inclusion sont refus de participer à la recherche et personne protégée (tutelle/curatelle/privé de liberté)
pas nécessaire à indiquer
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