Prevalence and incidence of sexually transmitted infections in a cohort of female sex workers in San Pedro, Côte d'Ivoire (ANRS 12381 PRINCESSE project)

ANRS 12381 PRINCESSE
PRep · INfections sexuellement transmissibles Contraception · hEpatite b · Santé SExuelle

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Background

The vulnerability of female sex workers (FSWs) and their working conditions put them at high risk of HIV infection and other sexually transmitted infections (STIs). This exposure to HIV/STIs and their sexual and reproductive health needs led us to set up a community-based sexual health cohort for FSWs in Côte d'Ivoire (ANRS 12381 PRINCESSE study).

Objective

To assess the prevalence (at inclusion) and incidence (during follow-up) of STIs in the PRINCESSE cohort.

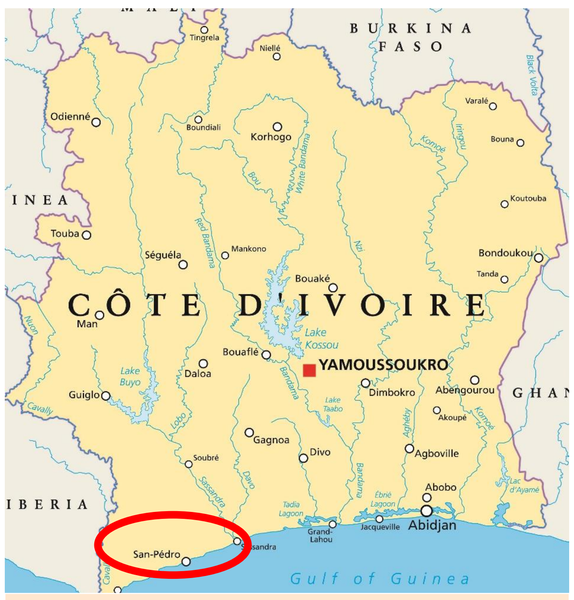
Methods

The ANRS 12381 PRINCESSE study is an interventional single-arm cohort which started in November 2019 among FSWs aged ≥ 18 years in the San Pedro area.

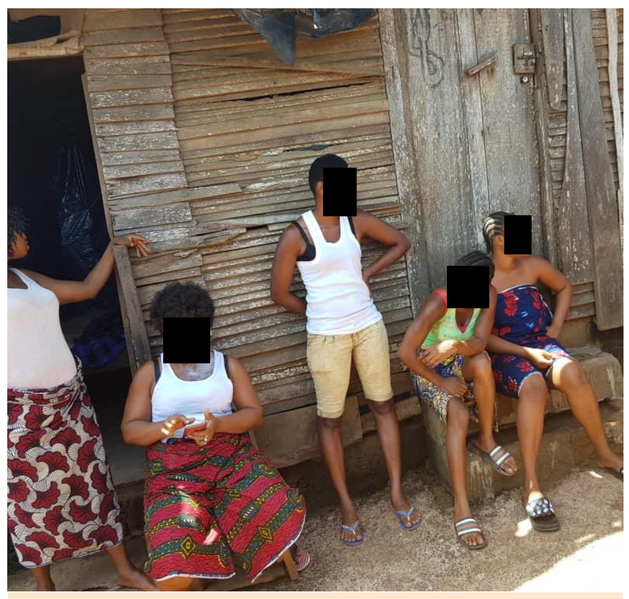
Care services included quarterly syndromic screening for STIs, as well as vaginal and anal swabs for the screening of *chlamydia trachomatis* (CT) and *neisseria gonorrhoea* (NG) by polymerase chain reaction (PCR) at M0, M12 and M24. At the same visits, identification of dysplasias and precancerous lesions of the cervix was performed by visual inspection after applying acetic acid and Lugol's iodine. STIs were managed according to the national algorithm, or referred to specialised facilities in case of complications.

Our analyses, performed with Stata 14.0, covered all participants included until 30 June 2022.

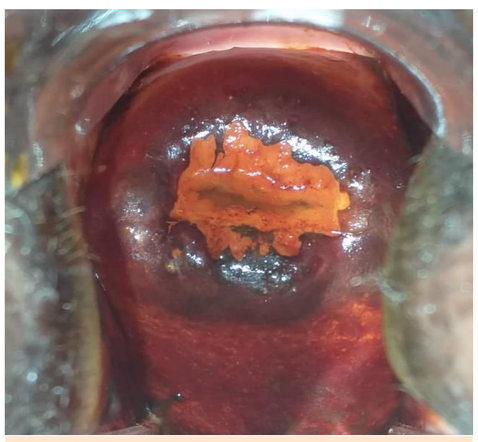
We described:
› the prevalence, at inclusion (M0) of HIV, STIs (syndromic and PCR), cervical lesions and condylomas;
› the incidence (during follow-up) of STIs (syndromic and PCR).



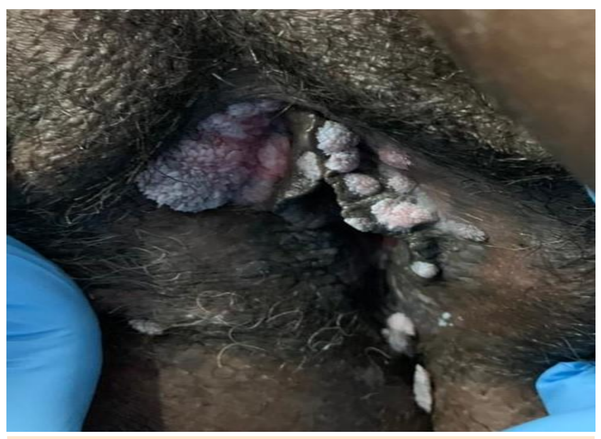
Study area



Sex work site



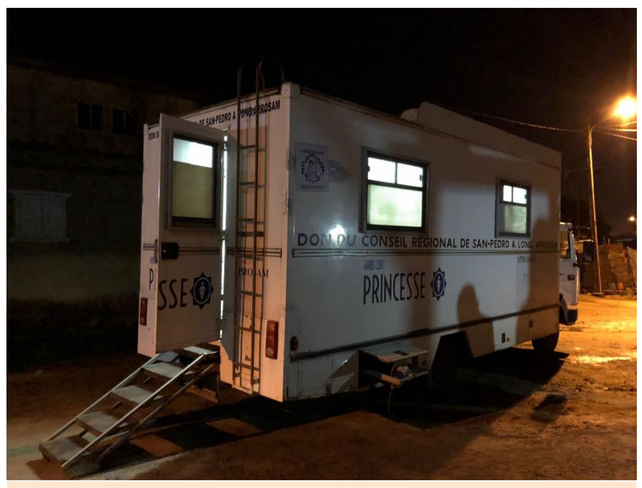
Precancerous cervical lesion



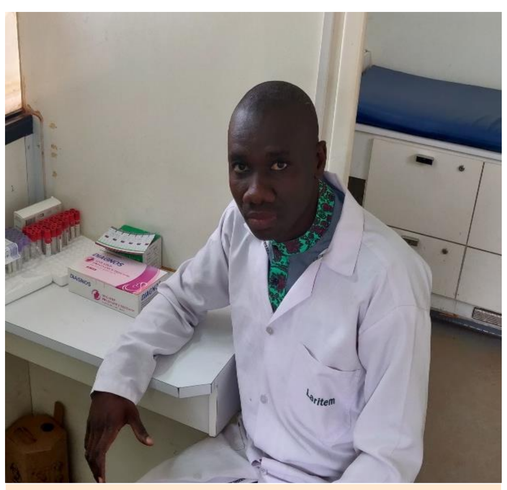
Condylomas

Results

At the end of June 2022, 431 FSWs were included in the cohort. The median age was 29 years, 34% had never been to school, 56% were Ivorian, and the median duration of sex work was 2 years. The median usual price with clients was 2000 CFA (≈2.3 USD).



Mobile clinic



Clinic staff

Table 1. Prevalence of STIs at inclusion

	n/N	prevalence	[95% CI]
HIV	48/432	12.1%	8.3 to 14.5
Syndromic STIs	105/426	24.6%	20.7 to 29.1
Cervical lesions	19/178	6.8%	4.4 to 10.5
Condyloma	13/283	4.6%	2.7 to 7.7
Chlamydia Trachomatis (PCR)	24/282	8.5%	5.6 to 12.6
Neisseria Gonorrhoea (PCR)	9/282	3.2%	1.6 to 6.2

At inclusion, 6.8% [95% confidence interval: 4.4-10.5] had cervical lesions with 3.5% leukoplakia and 2.1% haemorrhagic cervical junction zone. The prevalence of syndromic STIs was 24.6% [20.7-29.1]; associated clinical signs were vaginal discharge (17.8%), vaginal ulceration (2.6%), lower abdominal pain (4.7%) and cervical inflammation (3.5%).

The prevalence of anovaginal CT and NG were 8.5% [5.6-12.6] and 3.2% [1.6-6.2], respectively; clinical signs were found in 2.6% of CT-positive and 12.2% of NG-positive FSWs. Most FSWs with syndromic STIs did not have CT or NG infection.

Table 2. Incidence of STIs during follow-up

	cases/py	incidence	[95% CI]
Syndromic STIs	105/255	41.3	33.8 to 50.0
Chlamydia Trachomatis (PCR)	5/79	6.3	2.1 to 14.8
Neisseria Gonorrhoea (PCR)	2/82	2.5	0.3 to 8.9

py: person-years

During the follow-up, only one case of HIV seroconversion was observed, at week 2 (the patient was in primo infection at inclusion).

105 cases of syndromic STIs were observed per 255 person-years, i.e. an incidence of 41.3% [33.8-50.0].

Using PCR data at M12 and M24, the incidence of CT and NG was estimated to be respectively 6.3% [2.1-14.8] and 2.5 [0.3-8.9].

Discussion · Conclusion

This study shows a **high prevalence and incidence of syndromic STIs** among the FSWs in the PRINCESSE cohort, highlighting the importance and interest of regular follow-up. However, a relatively low prevalence of NG and CT was noted, which could be linked to self-medication or the high condom use during sex with clients, as previously shown in this same population (Becquet et al. *BMJ Open* 2020). There is therefore an interest in insisting on the offer of condoms and lubricant in the sexual health offer, as we are doing in the PRINCESSE cohort.
Our results also showed the **predominantly asymptomatic nature of STIs discovered by PCR** in this at-risk population and, therefore, the importance of coupling syndromic screening and PCR analysis.