PrEP RATHER THAN COVID-19 INFLUENCED SEXUAL ACTIVITY MORE AMONG MSM IN TOKYO

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RESULTS

1612 MSM were recruited in Sexual Health Clinic (SHC), the MSM cohort as of June 2021 (361 prior to June 2019, 647 in BC and 604 in AC). 21 (3.2%) and 11 (1.8%) MSM were excluded from the cohort due to HIV infection at the enrollment in BC and AC. The average age of the new participants in SHC were 33.8 years (32.9 years in the non-PrEP users and 38.4 years in the PrEP users) in BC and 33.4 years (32.4 years in the non-PrEP users and 36.6 years in the PrEP useras) in AC, respectively (**Table 1**).

The **table 2** demonstrated the incidence of HIV and STI among the participants who visited the cohort at least twice in each period. While the incidence of STIs showed no substantial changes from BC to AC in all MSM, the incidence of STIs decreased in the non-PrEP users and increased in the PrEP users consistently from BC to AC.

The differences in the incidence of STIs between the non-PrEP and the PrEP users were more remarkable in AC than BC. In AC, the incidence of STIs almost tripled in the PrEP users compared to the non-PrEP users. These findings might be explained that increasing recognition of PrEP rather than the impact of COVID-19 leads to initiation of PrEP by MSM with higher risk in addition to risk compensation in the cohort.

BACKGROUND

COVID-19 drastically changed life style in Japan. However, the influence of COVID-19 on sexual activity among men who have sex with men (MSM) have not been fully understood.

Although, the number of new HIV infection in Japan in 2020 decreased by 11.4%, the number of public HIV and sexually transmitted infection (STI) tests at health centers decreased by half due to overwhelmed burden by COVID-19, which made it difficult to access concise situations.

Thus, we retrospectively evaluated incidence of HIV/STIs among MSM in Japan before and after COVID-19 endemic in Sexual Health Clinic (SHC), a non HIV-infected MSM cohort in Tokyo, Japan.

Table2. Incidence of HIV and STI with and without PrEP before and after COVID-19

Incidence	Total	Non-PrEP users	PrEP users
Before COVID-19 (2018/7-2019/12) (FU person-year / n)	587.9 PY / 727	358.2 PY / 500	229.6 PY / 227
HIV (%/year)	2.6 (95%CI:1.4-4.2, n=15)	4.2 (95%CI:2.3-6.9, n=15)	0 (95%CI:0-1.6, n=0)
Syphilis (%/year)	4.6 (95%CI:3.0-6.7, n=27)	4.2 (95%CI:2.3-6.9, n=15)	5.2 (95%CI:2.7-9.1, n=12)
Chlamydia (%/year)	24.7 (95%CI:20.8-29.0, n=145)	22.3 (95%CI:17.8-27.8, n=80)	28.3 (95%CI:21.8-36.1, n=65)
Gonorrhea (%/year)	16.7 (95%CI:13.5-20.3, n=98)	17.6 (95%CI:13.5-22.5, n=63)	15.2 (95%CI:10.6-21.2, n=35)
After COVID-19 (2020/1-2021/6) (FU person-year / n)	964.2 PY / 1082	662.8 PY / 721	301.4 PY / 361
HIV (%/year)	1.2 (95%CI:0.6-0.2, n=12)	1.8 (95%CI:0.9-3.2, n=12)	0 (95%CI:0-1.2, n=0)
Syphilis (%/year)	4.8 (95%CI:3.5-6.4, n=46)	2.9 (95%CI:1.7-4.5, n=19)	9.0 (95%CI:5.9-13.0, n=27)
Chlamydia (%/year)	32.0 (95%CI:28.6-35.8, n=309)	19.9 (95%CI:16.7-23.6, n=132)	58.7 (95%CI:50.4-68.0, n=177)
Gonorrhea (%/year)	14.7 (95%CI:12.4-17.4, n=142)	10.0 (95%CI:7.7-12.7, n=66)	25.2 (95%CI:19.9-31.6, n=76)

PrEP: Pre-exposure prophylaxis, COVID: coronavirus disease, FU: follow-up, PY: person-year, CI: confidence interval

Table1. Prevalence of HIV and STI among the new participants in the MSM cohort

Prevalence	Total new participants	Non-PrEP users	PrEP users	P value
Before COVID-19 (2018/7-2019/12) (n / average age)	647 / 33.8 yo	534 / 32.9 yo	113 / 38.4 yo	
HIV	21 (3.2%)	21 (3.9%)	0 (0%)	0.032
Syphilis	34 (5.3%)	30 (5.6%)	4 (3.5%)	0.368
Chlamydia	100 (15.5%)	76 (14.2%)	24 (21.2%)	0.061
Gonorrhea	50 (7.7%)	45 (8.4%)	5 (4.4%)	0.148
After COVID-19 (2020/1-2021/6) (n / average age)	604 / 33.4 yo	455 / 32.4 yo	149 / 36.6 yo	
HIV	11 (1.8%)	11 (2.4%)	0 (0%)	0.055
Syphilis	22 (3.6%)	21 (4.6%)	1 (3.5%)	0.023
Chlamydia	92 (15.2%)	74 (16.3%)	18 (12.1%)	0.217
Gonorrhea	49 (8.1%)	41 (9.0%)	8 (5.4%)	0.158

PrEP: Pre-exposure prophylaxis, COVID: coronavirus disease, FU: follow-up, PY: person-year
Chi-square or Fisher's exact tests were used for analyzing categorical variables.

METHODS

MSM over 16 years old have been recruited in the cohort at Sexual Health Clinic (SHC) in Tokyo, Japan since 2017. The participants were examined for HIV infection, syphilis (quantitative RPR/TPHA), and rectal/pharyngeal *Chlamydia trachomatis* and *Neisseria gonorrhea* infections every 3 months in the cohort.

In the participants of the cohort, incidence of HIV and STI were evaluated before and after COVID-19 pandemic. The period between July 2018 and December 2019 was defined as before COVID-19 (BC) and the period between January 2020 and June 2021 was defined as after COVID-19 (AC), (**Figure 1**).

As other factors to influence on sexual activity, use of pre-exposure prophylaxis (PrEP) was also evaluated before and after COVID-19 pandemic.

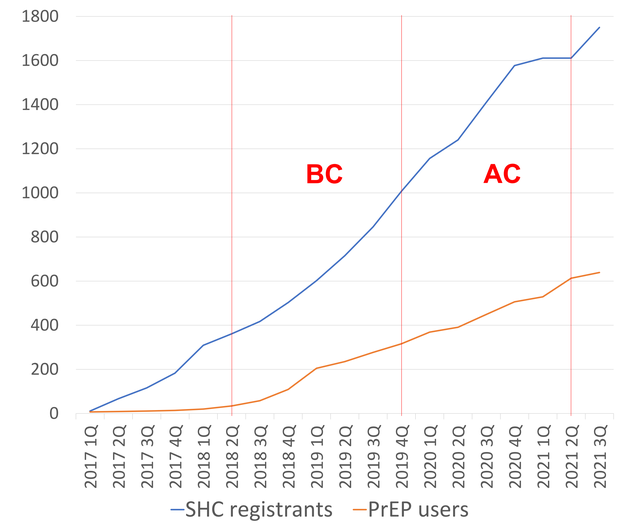
CONCLUSIONS

PrEP should be implemented with intensive STI tests in Japan for further decrease in STIs in the long run.

ADDITIONAL KEY INFORMATION

Limitation: This study retrospectively reviewed the cohort data. As a result, timing of PrEP initiation was not unified and most of them didn't start PrEP at the recruitment. Regarding this, it is noteworthy that, while the prevalence of STI seemed higher in the non-PrEP users in most cases, the incidence of STI in the PrEP users was triple times higher, especially, in AC. This difference between the prevalence and incidence could indicate the influence of the risk compensation by the PrEP initiation.

Figure 1. The participants and the PrEP users in the MSM cohort as of September in 2021



SHC: Sexual Health Clinic, PrEP: Pre-exposure prophylaxis

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