**Online supplementary**

**Supplementary Table 1**: Comparison of demographic characteristics, clinical presentations, laboratory investigations and syphilis treatment of patients included in the study and patients who lost follow-up (excluded from the study)

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| --- | --- | --- | --- | --- |
| **Characteristics** |  | **Patients included in the study****(N = 497) (%)** | **Loss follow-up patients****(N = 731) (%)** | ***p*-value** |
| Sex | Male | 476 (95.8) | 706 (96.6) | 0.466\* |
| Female | 21 (4.2) | 25 (3.4) |
| Age, years | Median (IQR) | 30 (24-39) | 29 (24-35) | 0.038\*\* |
| Min-max | 14-77 | 14-77 |
| Address | BangkokOthersNo data | 371 (74.6)125 (25.2)1 (0.2) | 550 (75.3)181 (25.0)0 | 0.850\* |
| Nationality | Thai | 480 (96.6) | 710 (97.1) | 0.586\* |
| Non-Thai | 17 (3.4) | 21 (2.9) |
| Occupation | Sex worker | 60 (12.1) | 90 (12.3) | 0.900\* |
| Non-sex worker | 437 (87.9) | 641 (87.7) |
| Education | UndergraduateGraduate or higher | 231 (45.7) | 335 (46.0) | 0.724\* |
| 260 (54.3) | 393 (54.0) |
| Marital status | Married | 48 (9.7) | 56 (7.8) | 0.247\* |
| Not married | 447 (90.3) | 673 (92.2) |
| Sexual preference | Heterosexual | 92 (18.7) | 116 (15.9) | 0.204\* |
| MSM-Homosexual-BisexualNo data | 400 (81.3)359 (72.2)41 (8.2)5 (1.0) | 613 (84.1) |
| Past syphilis infection | Yes | 61 (12.3) | 76 (10.4) | 0.305\* |
| No | 436 (87.7) | 655 (89.6) |  |
| Past STIs other than syphilis | Yes | 74 (14.9) | 119 (16.3) | 0.511\* |
| No | 423 (85.1) | 612 (83.7) |  |
| Sexual risks in the past 3 months | No risk | 198 (39.8) | 161 (22.0) | <0.001\* |
| 1 risk | 146 (27.4) | 123 (16.8) |  |
| $\geq $2 risk | 163 (32.8) | 612 (83.7) |  |
| **Supplementary Table 1**: Comparison of demographic characteristics, clinical presentations, laboratory investigations and syphilis treatment of patients included in the study and patients who lost follow-up (excluded from the study) (cont.) |
| **Characteristics** |  | **Patients included in the study****(N = 497) (%)** | **Loss follow-up patients****(N = 731) (%)** | ***p*-value** |
| Reason for visiting the clinic | STI symptoms | 191 (38.7) | 346 (53.0) | <0.001\* |
| Refer | 189 (38.3) | 151 (21.3) |
| Abnormal blood test | 45 (9.1) | 39 (5.5) |
| Check up | 43 (8.7) | 97 (13.7) |
| Partner(s) had STIs/symptoms  | 20 (4.1) | 23 (3.2) |
| Follow-up | 2 (0.4) | 14 (2.0) |
| Others | 3 (0.6) | 10 (1.4) |
| Clinical presentations of syphilis: |
| Ulcer | Yes* Anal
* Genital
* Oral
 | 74 (14.9)* 8 (1.6)
* 64 (12.9)
* 2 (0.4)
 | 91 (12.4) | 0.218\* |
| No | 423 (85.1) | 640 (87.6) |  |
| Rash$ | Yes | 219 (44.1) | 323 (44.2) | 0.966\* |
| No | 278 (55.9) | 408 (55.8) |  |
| Alopecia and/or madarosis | Yes | 8 (1.6) | 8 (1.1) | 0.434\* |
| No | 489 (98.4) | 723 (98.9) |  |
| HIV co-infection | Yes | 210 (42.3) | 349 (55.4) | 0.039\* |
| No | 219 (44.0) | 281 (44.6) |  |
| Hepatitis B co-infection | Yes | 28 (9.0) | 43 (11.5) | 0.285\* |
|  | No | 284 (91.0) | 332 (88.5) |  |

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| **Supplementary Table 1**: Comparison of demographic characteristics, clinical presentations, laboratory investigations and syphilis treatment of patients included in the study and patients who lost follow-up (excluded from the study) (cont.) |
| **Characteristics** | **Patients included in the study****(N = 497) (%)** | **Loss follow-up patients****(N = 731) (%)** | ***p*-value** |
| Other STI co-infections | Yes- Chlamydia-Gonorrhea-Herpes simplex-Trichomonas -Condyloma accuminata | 92 (39.3)56 (11.2)28 (5.6)1 (0.2)1 (4.8\*\*\*)16 (3.2) | 126 (37.6) | 0.681\* |
| No | 142 (60.7) | 209 (62.4) |  |
| Syphilis stages | PrimarySecondaryEarly latentLate latent and latent syphilis with unknown durationTertiary | 21 (4.2)255 (51.3)67 (13.5)154 (31.0)0 |  |
| Syphilis treatment | Benzathine penicillin GOthers | 337 (67.8)160 (32.2) | 417 (57.8)305 (42.2) | <0.001\* |
| Baseline titer | <1:32>1:32 | 219 (44.1)278 (55.9) | 342 (46.8) | 0.347\* |
| 389 (53.2) |

\*Chi-square

\*\*Mann-Whitney Test

\*\*\*Only in women

**Supplementary Table 2**: Baseline titer of syphilis patients by HIV status and syphilis stage after removing the outlier

|  |  |  |
| --- | --- | --- |
| **Characteristics** |  | **Baseline titer****(Median (IQR))** |
| HIV status | HIV-positive | 1:32 (1:8-1:64) |
| HIV-negative | 1:16 (1:4-1:32) |
| Syphilis stage | Primary | 1:8 (1:4-1:32) |
| Secondary | 1:32 (1:16-1:64) |
| Early latent | 1:8 (1:2-1:32) |
| Late latent and latent syphilis with unknown duration | 1:4 (1:1-1:8) |

**Supplementary Table 3**: Factors associated with serological cure after syphilis treatment

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Characteristics** | **Serological cure (N=309) (%)** | **No serological cure** **(N=83) (%)** | ***p*-value** | **RR (95% CI)** |
| Sex | Male | 299 (96.8) | 78 (94.0) | 0.329# | 1.19 (0.83-1.71) |
| Female | 10 (3.2) | 5 (6.0) |
| Age group | < 25 years | 93 (30.1) | 18 (22.0) | 0.962\* | 1.01 (0.81-1.26) |
|  | 25-50 years | 201 (65.0) | 61 (74.4) | 0.518\* | 0.92 (0.74-1.14) |
|  | > 50 years | 15 (4.9) | 3 (3.7) |  | 1 |
| Address | Bangkok | 233 (75.6) | 58 (69.9) | 0.285\* | 1.07 (0.94-1.21) |
| Others | 75 (24.4) | 25 (30.1) |
| Nationality | Thai | 298 (96.4) | 78 (94.0) | 0.314\* | 1.15 (0.83-1.61) |
| Non-Thai | 11 (3.6) | 5 (6.0) |
| Occupation | Sex worker | 36 (11.7) | 14 (16.9) | 0.206\* | 0.90 (0.75-1.08) |
| Non-sex worker | 273 (88.3) | 69 (83.1) |
| Education | < graduate | 134 (43.8) | 41 (49.4) | 0.362\* | 0.95 (0.86-1.06) |
| Graduate or higher | 172 (56.2) | 42 (50.6) |
| Marital status | Not married | 282 (91.9) | 77 (92.8) | 0.785\* | 0.97 (0.81-1.17) |
| Married | 25 (8.1) | 6 (7.2) |
| Sexual preference | Heterosexual | 52 (16.9) | 13 (15.9) | 0.815\* | 1.02 (0.89-1.16) |
| MSM | 255 (83.1) | 69 (84.1) |
| Past syphilis infection | Yes | 32 (10.4) | 12 (14.5) | 0.293\* | 0.91 (0.76-1.11) |
| No | 277 (89.6) | 71 (85.5) |  |  |

**Supplemental Table 3**: Factors associated with serological cure after syphilis treatment (Continue)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Characteristics** | **Serological cure (N=309) (%)** | **No serological cure** **(N=83) (%)** | ***p*-value** | **RR (95% CI)** |
| Past STIs other than syphilis | Yes | 51 (16.5) | 8 (9.6) | 0.120\* | 1.12 (0.99-1.25) |
| No | 258 (83.5) | 75 (90.4) |  |  |
| Sexual risks in the past 3 months\*\* | ≥2 risks | 85 (27.5) | 19 (22.9) | 0.182\* | 1.09 (0.96-1.24) |
| 1 risk | 106 (34.3) | 24 (28.9) | 0.16\* | 1.09 (0.97-1.23) |
| No risk | 118 (38.2) | 40 (48.2) | 1 | 1  |
| HIV co-infection | Yes | 126 (46.3) | 41 (53.9) | 0.240\* | 0.94 (0.84-1.05) |
|  | No | 146 (53.7) | 35 (46.1) |  |  |
| Hepatitis B co-infection | Yes | 15 (7.7) | 2 (3.5) | 0.375# | 1.15 (0.96-1.39) |
| No | 180 (92.3) | 55 (96.5) |  |  |
| Other STI co-infections | Yes | 60 (40.3) | 14 (42.4) | 0.820\* | 1.01 (0.84-1.22) |
| No | 89 (59.7) | 19 (57.6) |  |  |
| Syphilis stage | Early syphilis | 246 (79.6) | 51 (61.4) | 0.001\* | 1.25 (1.07-1.46) |
| Late syphilis | 63 (20.4) | 32 (38.6) |
| Syphilis treatment | Benzathine penicillin G | 206 (66.7) | 56 (67.5) | 0.890\* | 0.99 (0.89-1.11) |
| Others | 103 (33.3) | 27 (32.5) |
| Baseline titer | ≥1:32 | 162 (52.4) | 31 (37.3) | 0.015\* | 1.14 (1.03-1.26) |
|  | <1:32 | 147 (47.6) | 52 (62.7) |  |

\*Pearson Chi-Square

\*\*sexual risks were defined as 1) partner(s) have STIs 2) sex with sex worker(s) without condom use 3) more than 1 sexual partner 4) sex with new partner 5) partner(s) had sex with others 6) sex without condom use or break/leakage of condom

# Fisher’s Exact test