Evolution of notified sexually transmitted infections in Barcelona during the first wave of the COVID-19 pandemic

Dear Editor,

With the arrival of COVID-19, STI units decreased their activity or even closed and individuals avoided healthcare facilities. These factors conditioned the diagnosis of severe conditions, including STI. The main objective of this study was to analyse the number of newly notified STI cases and HIV postexposure prophylaxis (PEP) in Barcelona during the COVID-19 pandemic.

A retrospective study including all cases of gonorrhoea, primary and secondary syphilis, lymphogranuloma venereum (LGV) and new HIV diagnoses reported to the Public Health Agency of Barcelona (ASPB), from January 2019 to September 2020, was carried out. The number of PEP prescribed in three university hospitals in Barcelona (Hospital del Mar, Hospital Vall d’Hebron and Hospital Sant Pau), during the same period, was also included as an indicator of unprotected sexual practices during the lockdown.

The evolution of cases for each STI was evaluated with multiple linear regression analysis with time as a covariate. Fisher’s exact test was used to compare the numbers of diagnoses. The study protocol was approved by the institutional review board (2020/9420).

The demographic characteristics of the included patients are shown in Table 1. Cases of gonorrhoea decreased globally in a range of seven cases per month (beta change = −7, P-value = 0.013), and a marked decrease was seen from March 2020 (beta change = −224, P < 0.001; Fig. 1a). Accordingly, immediately after the lockdown, during the third week of March 2020, only 18 cases were notified (in contrast with 49 cases during the same week in 2019), which means a difference of 63%.

Table 1 Clinical and epidemiological characteristics of the patients included in the study

|                  | New diagnosis | n  | Mean age | Male sex (%) | Transexual (%) | MSM (%) | HIV Coinfection |
|------------------|---------------|----|----------|--------------|---------------|---------|-----------------|
| **Year 2019**    |               |    |          |              |               |         |                 |
| **Gonorrhoea**   |               | 3146| 33       | 2675 (85.03%)| 18 (0.57%)    | 1293 (71.79%)| 436 (27.56%)    |
| (01/01–31/12)    |               |    |          |              |               |         |                 |
| **Year 2020**    |               | 1563| 33       | 1353 (86.73%)| 5 (0.32%)     | 217 (62.54%)| 52 (18.98%)     |
| (01/01–30/09)    |               |    |          |              |               |         |                 |
| **LGV**          |               | 255 | 37.5     | 254 (99.61%) | 1 (0.39%)     | 140 (95.89%)| 92 (64.33%)     |
| (01/01–31/12)    |               |    |          |              |               |         |                 |
| **Year 2020**    |               | 141 | 38.54    | 141 (99.29%) | 1 (0.70%)     | 40 (95.23%)| 18 (45%)        |
| (01/01–30/09)    |               |    |          |              |               |         |                 |
| **HIV**          |               | 269 | 33.92    | 241 (89.59%) | 0             | 216 (80.3%)|                 |
| (01/01–31/12)    |               |    |          |              |               |         |                 |
| **Year 2019**    |               | 48  | 34.96    | 44 (91.67%)  | 1 (2.08%)     | 38 (79.17%)|                 |
| (01/01–30/09)    |               |    |          |              |               |         |                 |
| **Primary syphilis** |             | 214 | 38       | 194 (90.65%) | 7 (3.27%)     | 160 (84.21%)| 80 (44.69%)     |
| (01/01–31/12)    |               |    |          |              |               |         |                 |
| **Year 2020**    |               | 90  | 37       | 83 (92.22%)  | 2 (2.22%)     | 40 (81.63%)| 15 (33.33%)     |
| (01/01–30/09)    |               |    |          |              |               |         |                 |
| **Secondary syphilis** |          | 242 | 38       | 233 (96.28%) | 1 (0.41%)     | 187 (88.21%)| 90 (42.25%)     |
| (01/01–31/12)    |               |    |          |              |               |         |                 |
| **Year 2020**    |               | 112 | 36       | 103 (93.64%) | 2 (1.81%)     | 44 (84.61%)| 24 (45.28%)     |
| (01/01–30/09)    |               |    |          |              |               |         |                 |
| **Early syphilis** |             | 456 | 38       | 427 (93.65%) | 8 (1.75%)     | 347 (86.32%)| 170 (43.37%)    |
| (01/01–31/12)    |               |    |          |              |               |         |                 |
| **Year 2020**    |               | 202 | 38.5/2   | 186 (93.94%) | 4 (1.98%)     | 84 (83.17) | 39 (39.8%)      |
| (01/01–30/09)    |               |    |          |              |               |         |                 |

MSM, men who have sex with men; ND, non-data.
No statistical differences were detected among urethral gonorrhoea in both weeks, whereas non-urethral gonorrhoea cases, which are commonly asymptomatic, showed a clear-cut reduction (seven cases in 2020 against 34 in 2019, P < 0.005). A significant plunge in LGV notifications from March 2020 can be seen (Fig. 1b). The number of early syphilis cases decreased in 2020 (1.2 cases per month, P = 0.047). No trend changes were observed from March 2020 onwards. However, in July 2020 there is a peak in primary syphilis diagnoses. The general trend is a decrease in the number of new HIV diagnoses in the study period (beta change −1.4, P < 0.001), without significant differences from March 2020 (Fig. 1c). During July, August and September 2020, no new HIV diagnoses were reported. The number of prescribed PEP went from 321 in 2019 (238 from January to September) to 170 in 2020. During the lockdown period, prescriptions decreased significantly (Fig. 1g).

This study shows a marked decrease either in the newly reported STIs or in the number of PEP treatments in Barcelona from March to September 2020. A similar phenomenon has been observed in different nationally or locally based surveillance studies (the USA2, Australia3,4, Rome5 and London6). Conversely, in Milan a reduction in non-acute cases was noted.7 In Lebanon, an increase in PEP treatments was detected.8

In March 2020, a reduction of 63% in gonorrhoea notifications was noted, mainly attributable to asymptomatic cases. Probably these findings are the consequence of the stop of screening programmes and a decrease in the number of consultations, testing and/or notifications during the lockdown. The future impact of these events is unknown, but may result in an increase in new HIV diagnoses at later stages or in asymptomatic STIs.

The main limitation of this work is its retrospective nature. Besides, the study is focused on notified cases, which may not reflect the real incidence. No information about PreP administration or discontinuation during the lockdown could be analysed.

In summary, a reduction in reported STI was detected. The decrement in the reported cases of gonorrhoea could be attributable to the underdiagnosis of asymptomatic cases. Further studies will confirm the consequences of these findings.

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**Conflict of interests**

None declared.

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**Ethics approval**

The study protocol was approved by the institutional review board of Hospital del Mar number 2020/9420.

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**Figure 1** Evolution of notified STI in Barcelona, from January 2019 to September 2020. (a) Gonorrhoea cases, (b) LGV (c), primary syphilis, (d) secondary syphilis, (e) early syphilis, (f) HIV and (g) HIV postexposure prophylaxis.
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