Is COVID-19 affecting the epidemiology of syphilis in Belgrade?

Sir,

The first case of coronavirus 2019 disease (COVID-19) in Serbia was reported on 6th March 2020, with the Serbian government declaring a state of emergency and nationwide lockdown on 15th March 2020.[1] This included various social distancing measures, some of which still remain after the lockdown was lifted on 6th May 2020. Although the City Institute for Skin and Venereal Diseases in Belgrade is a reference centre for sexually transmitted diseases, during the lockdown it remained open only for emergencies. Late June and November saw the reinstatement of even stricter social confinement measures, as two new waves of infection broke out. This study aims to assess whether COVID-19 affected the epidemiology of syphilis in Belgrade. We used data on newly registered cases of syphilis diagnosed at any stage of the disease during the study period of three years - 2018, 2019 and 2020. Data collected included age, gender, sexual orientation, human immunodeficiency virus (HIV) status and stage of syphilis. Chi-square test and *t*-test were used in statistical analysis. The investigation was approved by the Ethical Committee of the City Institute for Skin and Venereal Diseases.

Between 2018 and 2020, 314 new cases of syphilis were diagnosed in the City Institute for Skin and Venereal Diseases in Belgrade comprising 100 cases in 2018, 89 cases in 2019 and 125 in 2020 [Table 1]. In comparison with 2018 and 2019, patients with syphilis diagnosed in 2020 did not significantly differ in their median age, male/female ratio, sexual orientation, HIV status and stage of the disease. The mean age of patients in 2020 was significantly lower compared to the mean age of patients in both 2018 and 2019 ($P < 0.05$) [Table 1]. In fact, the comparison of age-groups of patients in the observed years showed that in 2020, number of patients of the age of 50 years or more was less when compared to 2018 and 2019 ($P = 0.011$ and $P = 0.047$, respectively).

During the period from 2009 to 2018, the number of newly diagnosed syphilis cases in Belgrade was increasing and the highest crude rate was recorded in 2018.[2] Compared to 2018 and 2019, the number of syphilis cases increased in 2020 by 25% and 40.5%, respectively. The actual number of new syphilis cases in 2020 is probably even higher because people had limited access to the public health service and some infected persons might have sought care in the private sector.

Our results are in line with data from Bologna where the percentage of new syphilis cases and other sexually transmitted infections had significantly increased[3] suggesting that the lockdown had not actually interfered with high-risk sexual behaviour. Reports from some European cities have shown that the incidence of sexually transmitted infections decreased during the lockdown,[4,5] which could be explained by restricted movement or reduced access to health services for people with sexually transmitted infections. However, Sacchelli *et al.*[6] reported in their study that no significant change in the incidence of sexually transmitted infections has occurred during the pandemic.

The expected decrease in the number of newly diagnosed syphilis cases in Belgrade, due to the pandemic induced restrictive measures, did not probably occur because during the last 10 years, in our population syphilis has predominantly been diagnosed in men who have sex with men[2] who can easily reach sexual partners through mobile dating applications and do not require public places to meet.

Compared to the previous two years, the lower number of syphilis cases in those with age 50 years or more in 2020 could be explained by the fact that older people due to fear of COVID-19, have shown greater responsibility towards their own health and limited their social contacts with household members only (people over 65 were completely forbidden to go out during the lockdown) thereby reducing their chance to come into potential sexual contact.

Stress, anxiety, depression and isolation caused by the pandemic has certainly affected the sexual behaviour, changing sexual habits and caused more frequent visits to

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Table 1: Demographic characteristics of new syphilis cases diagnosed in the City Institute for Skin and Venereal Diseases, Belgrade, in 2018, 2019 and 2020

Year	2018	2019	2020
Number of cases	100	89	125
Mean age ± SD	38.6 ± 12.7	37.6 ± 11.4	34.7 ± 9.9*
Median age	36	36	34
Gender: Male	97 (97.0%)	84 (94.4%)	121 (96.7%)
Female	3 (3.0%)	5 (5.6%)	4 (3.3%)
Sexual orientation:	79 (79.0%)	67 (75.3%)	102 (81.6%)
Homosexual	21 (21.0%)	22 (24.7%)	23 (18.4%)
Heterosexual			
HIV positive	7 (7.0%)	11 (16.8%)	13 (10.4%)
Primary syphilis	29 (29.0%)	21 (23.6%)	32 (25.6%)
Secondary syphilis	33 (33.0%)	38 (42.7%)	42 (33.6%)
Recent latent syphilis	30 (30.0%)	25 (20.0%)	35 (28.0%)
Late latent syphilis	8 (8.0%)	5 (5.7%)	16 (12.8%)

*According to *t*-test, $P = 0.011$ in comparison to 2018, and $P = 0.047$ in comparison to 2019; SD - standard deviation; HIV - human immunodeficiency virus

porn sites, sex toys and cybersex consumption.[7] A study conducted in Israel[8] has shown that men who have sex with men limited kissing their sexual partners and increased the use of sex phones, webcam sex and porn consumption during lockdown. The majority of our patients with syphilis had unprotected sex during the lockdown and explained that sex was a way to relieve frustration due to the pandemic and that they participated in private gay orgies. In conclusion, the increased number of new syphilis cases in our institute indicates that the pandemic did not significantly affect the risky behaviour of the majority of the population, with the exception of those who were 50 and more years old.

Declaration of patient consent

Patients' consent is not required as patients' identity is not disclosed or compromised.

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Conflicts of interest

There are no conflicts of interest.

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References

1. The Government of the Republic of Serbia. State of emergency declared throughout Serbia. 2020 March 15. Available from: https://srbija.gov.rs/vest/en/151398/state-of-emergency-declared-throughout-serbia.php [Accessed on January 16, 2020].
2. Bjekić M, Vlajinac H, Begović-Vuksanović B. Syphilis characteristics in Belgrade population in period from 2009 to 2018. Health Care 2020;49:9–14.
3. Balestri R, Magnano M, Rizzoli L, Infusino SD, Urbani F, Rech G. STIs and the COVID-19 pandemic: The lockdown does not stop sexual infections. J Eur Acad Dermatol Venereol 2020; 34:e766–8.
4. de Miguel Buckley R, Trigo F, de la Calle-Prieto F, Arsuaga M, Diaz-Menendez M. Social distancing to combat COVID-19 led to a marked decrease in food-borne infections and sexually transmitted diseases in Spain. J Travel Med 2020;27:taaa 134.
5. Latini A, Magri F, Dona MG, Giuliani M, Cristaudo A, Zaccareli M. Is COVID–19 affecting the epidemiology of STIs? The experience of syphilis in Rome [published online ahead of print, 2020 Jul 27]. Sex Transm Infect 2021;91:78.
6. Sacchelli L, Viviani F, Orioni G, Rucci P, Rosa S, Lanzoni A, *et al.* Sexually transmitted infections during COVID-19 outbreak: Comparison of patients referring to the service of sexually transmitted diseases during the sanitary emergency with those referring during the common practice. J Eur Acad Dermatol Venereol 2020;34:e553–6.
7. Mahanty C, Kumar R, Mishra BK. Analyses the effects of COVID-19 outbreak on human sexual behaviour using ordinary least-squares based multivariate logistic regression [published online ahead of print, 2020 Oct 18]. Qual Quant 2020;1–21.
8. Shilo G, Mor Z. COVID-19 and the changes in the sexual behaviour of men who have sex with men: Results of an online survey. J Sex Med 2020; 17:1827–34.