

Sexually transmitted infections among victims reporting sexual assaults attending at Hospital La Paz, Madrid (Spain)



Infecciones de transmisión sexual en víctimas de agresiones/abusos sexuales atendidas en el Hospital La Paz, Madrid (España)

Reports to the police for offences against sexual freedom in the Community of Madrid have increased significantly in recent years. In Spain, in 2019 there was an increase of 10.3% compared to the previous year (from 13,782 in 2018 to 15,319 in 2019)¹.

The serious consequences to the victim's physical and mental health include sexually transmitted infections (STIs). *Chlamydia trachomatis* (CT) and *Neisseria gonorrhoeae* (NG) are the most frequently involved microorganisms and pertain to notifiable diseases. The latest data collected by the Red de Vigilancia Epidemiológica [Epidemiological Surveillance Network] (RVE) in Spain in 2019 report 17,718 and 12,359 cases of CT and NG, respectively². Most STIs are asymptomatic and therefore their early detection is very important³.

This retrospective descriptive study sets out to determine the prevalence of STIs in women who reported sexual assault/abuse at the Hospital Universitario La Paz (HULP) in Madrid.

Baseline microbiological and forensic samples are collected when the assault is reported. Women ≥ 12 years old were included from January 2018 to December 2020.

Variables analysed: age and microorganism.

The STI study was performed on endocervical swab, urine and serum. Endocervical swabs were plated on chocolate agar and VCA3 selective medium (bioMérieux). Urine samples were processed for the genomic identification of CT, NG, *Trichomonas vaginalis* (TV), and *Mycoplasma genitalium* (MG) in the BD MAX CT/NG/TV Becton Dickinson system up until 2019 and in the AllplexTM STI Essential Assay (Seegene[®]) system from 2020 onwards. The serological samples were processed for the diagnosis of hepatitis B and C viruses (HBV and HCV), human immunodeficiency virus (HIV) and syphilis with the Atellica[®] system, Siemens; confirmation of syphilis serology was performed by TP-PA, Serodia-TPPA[®] and RPR.

Of the 502 patients, a sample was obtained at the time of the emergency in 58.16% (292/502). Expressed in years: 59.53% (103/173) in 2018; 58.72% (101/172) in 2019 and 56% (88/157) in 2020.

Microbiological samples were not available for 15.53% (78/502) because the aggressor was the woman's partner and for 26.29%

(132/502) a deferred sample was chosen and the patient did not attend the appointment.

An STI was detected in 11.6% (34/292) of the cases. 9.24% (27/292) corresponded to CT, 2.05% (6/292) to NG and 3 cases (1.02%) of CT/NG co-infection and 1 of them involved added infection with MG. 0.34% (1/292) were positive for TV, 0.34% (1/292) for syphilis, and 0.68% (2/292) for HBV; no positivity was detected in the serological control tests in the follow-up of HCV and HIV.

The most prevalent age range was from 15 to 27 years, with the mode of this group equal to 25 years and the second most frequent 18 years.

Comparing the prevalence of STIs in this study with that found in women in the HULP health district in the same period, the results are comparable: CT in 9.24% (27/292) and at HULP 8.9% (297/3334); NG 2.11% (6/292) vs. 2.35% (74/3265); syphilis 0.34% (1/292) vs. 0.001% (43/34,158); TV 0.34% (1/292) vs. 2.15% (71/3258); and GM 2.15% (71/3258) vs. 1.37% (9/587).

There are no Spanish publications with which to compare the results. Our prevalence is similar to other series of international publications^{4–7} (Table 1).

Regarding transmission of the infection, in most cases we are not certain that the contagion occurred at the time of the assault^{5,7}.

In the Spanish population, according to the RVE, most infections occur between 15 and 25 years², in line with our result and with those reported in international studies^{5,6}.

In conclusion, it is conceivable that the population most susceptible to suffering from an STI with particularly serious consequences, such as fertility problems, is the population under 25 years of age. Therefore, early detection and health education programmes should be designed for this population group.

Conflicts of interest

The authors who participated in this study declare that they have no conflicts of interest.

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Table 1
Results comparison.

Location	Period	N	%CT	%GN	%TV	%MG	%Syphilis	%HIV	%HCV	%HBV
Norway	2003–2010	412	6.4	0	0	1.9	0	0	0	0
Amsterdam	2005–2016	1066	10.3	1.8	–	–	0.1	0.2	–	0.6
Korea	2010–2019	1843	17.4	2.8	2.6	–	0.6	0	0	1.5
Paris	2012–2013	326	15	5	–	7.9	–	–	–	–
Madrid	2018–2020	292	9.24	2.05	0.34	0.34	0.34	0	0	0.68

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Cytomegalovirus seroprevalence in pregnant women in Madrid: First step for a systematic screening



Seroprevalencia de citomegalovirus en mujeres embarazadas en Madrid: primer paso para un cribado sistemático

Cytomegalovirus (CMV) infection is the most common congenital infection in the industrialised countries. A worldwide prevalence of 0.67% is estimated,¹ although these values vary depending on the country, which is 0.48% in Spain.²

Congenital CMV produces high morbidity and mortality; 20% of symptomatic newborns develop sensorineural hearing loss and psychomotor retardation and 4% die. In addition, 13% of asymptomatic newborns develop long-term sequelae.³

Despite the fact that serological screening during pregnancy is not recommended in Spain, in recent years certain diagnostic and therapeutic innovations have reopened this debate.^{4,5}

The worldwide prevalence of CMV in women of childbearing age is around 86% and increases with age.^{6,7} These figures are higher than those of syphilis, human immunodeficiency virus infection or hepatitis B virus. In Spain there are no current data on the prevalence of CMV in pregnant women, so we proposed this study to ascertain seroprevalence in pregnant women in our health area in Madrid.

A retrospective observational study was carried out between 2018 and 2019 including pregnant women with CMV serology in the first trimester. An IgG avidity study was performed in IgG- and IgM-positive women, whereas those with low avidity (<50%) underwent diagnostic amniocentesis.

Architect (Abbott) CMIA (Chemiluminescent Microparticle Enzyme Immunoassay) reagents were used to perform CMV IgG, CMV IgM and avidity testing. The CMV quantitative PCR was performed in STARlet (Werfen) with the Altona RealStar[®] CMV PCR Kit 1.0 reagent.

Of the 10,431 pregnant women seen during this period, IgG antibodies were determined in 6,299 (60.39%) of them, 3,921 of which were positive, which represents a seroprevalence of 62.2%. Simultaneous determination of IgM was performed in 2,721 pregnant women, 237 (8.71%) of whom tested positive (Fig. 1).

Of the pregnant women with positive IgM antibodies, 37 (15.6%) had low IgG avidity, suggesting an infection in the previous 3–6 months. This indicates that 1.35% of women screened for IgM and IgG antibodies were at risk of gestational infection in the first trimester. Of the 37 amniocenteses performed, 12 (32.43%) had a positive PCR for CMV in amniotic fluid, indicative of foetal infection and confirmed with PCR in urine at birth.

Therefore, we can conclude that among pregnant women who have undergone serological screening using IgM and IgG, the rate of congenital CMV in our area is 0.44%. If we only take pregnant women with positive IgG and IgM antibodies into account, this percentage rises to 5%, and is 32% in the case of low IgG antibody avidity.

This study analyses the seroprevalence of CMV in pregnant women in our country, with data that could be extrapolated to other populations with similar characteristics.

In our setting, 62% of pregnant women are seropositive, and more than one third are susceptible to suffering from a primary infection during pregnancy.

1.3% of women with positive IgM and IgG had a result indicative of infection in the previous three to six months and 32% of them developed a congenital infection. The global burden of congenital infection in our setting is surely higher, since infections produced after the first trimester and reinfections/reactivations in immune women have not been considered.

New therapeutic options are currently being tested in pregnant women to prevent foetal infection.⁸ Thus, a randomised, placebo-controlled clinical trial shows a significant decrease in foetal infection rates in pregnant women infected in the first trimester who received treatment with valgacyclovir (11% vs. 48%; $p = 0.020$).⁵ In addition, different groups have studied the role of hyperimmune gamma-globulin, and although there are questions about its efficacy, one study demonstrates a benefit in the transmission of infection to the foetus using high fortnightly doses (7.5% vs. 35.2% in the historical control group).⁹

However, it should be noted that knowledge of the serological status only provides useful information for detecting and treating primary CMV infections in pregnant women. For this reason, an effort must be made to improve serological techniques for the diagnosis of reinfections/reactivations, since they can also cause serious disease in the foetus.²

Additionally, serological screening in the first trimester would allow us to remind patients of the primary prevention recommen-