

Presence of *Chlamydia trachomatis* in young women in Northern Sardinia

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SUMMARY

Chlamydia trachomatis infection is the most common sexually transmitted disease among women. The aim of this study was to determine by PCR the incidence of *C. trachomatis* among young women in Northern Sardinia since no studies are present in this area. The results obtained showed a moderate increase of chlamydial infection since 1997.

KEY WORDS: *C. trachomatis*, PCR, Women

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Chlamydia trachomatis is the most common sexually transmissible infective agent in the world, with an estimated of 89 million persons affected each year.

This pathogen is recognized throughout the world as a major pathogen causing a sexually transmitted disease and affecting the reproductive tract with serious sequelae. The prevalence of infection varies geographically, many studies have documented high risk in young people, both heterosexual and homosexual and especially in women (Darville, 2006).

The aim of this study was to analyze the chlamydial incidence among young women in the Sassari area in recent years. Between January 2003 and June 2006, 1391 specimens were collected from different patients: 789 cervical swabs, 513 vaginal swabs and 89 urine samples. These samples were collected from two populations: the first comprised women with vaginal infections, the second patients with urethritis.

The presence of *C. trachomatis* was determined using a PCR as described in a previous study (Zanetti *et al.*, 1997). The incidence of chlamydial infection in women increased in recent years almost in all women younger than 25 years. Besides the great risk we wanted to observe the diffusion of this infection in young women in Sassari.

The data reported are preliminary, but very important considering there are no currently no studies on this problem in Sardinia. The samples analyzed were 1391 isolates from different people, only 45 (3.23%) of them were positive for *C. trachomatis* PCR (Table 1). The median age among the infected patients was 25-30 years. Our data demonstrated that *C. trachomatis* is present more frequently in cervical swabs than in vaginal swabs and urine, whereas in other studies urine appeared to be a better diagnostic sample, compared to urethral and vaginal swabs (Jensen *et al.* 2004).

Jensen *et al.* analyzed by PCR 828 first void urine samples (FVU) and 828 urogenital specimens from women. A total of 75 specimen sets were positive with a relative sensitivity of 79% for the urethral swab, 87% for the cervical swab, and 91% for the FVU. Cervical swabs are important to maintain a high sensitivity but the urethral

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TABLE 1 - Distribution of 45 *C. trachomatis* PCR positive samples according to specimen type.

Samples	N°	Positive	%
Cervical swab	789	27	3.4
Vaginal swab	513	17	3.3
Urine	89	1	1.1

swab specimen could be substituted with an FVU specimen to increase sensitivity. Spasovski *et al.* (2005) tested 1435 urine samples from male and female asymptomatic and symptomatic individuals. The PCR test was positive in 19/1210 asymptomatic persons with a prevalence of 1.6%: the prevalence of the infection was significantly higher among females (5.1%) compared to male individuals (0.7%). In the symptomatic group the prevalence of infection was 6.2%. Tanaka *et al.* (2000) analyzed 193 urine samples from male patients: 58 (30.1%) were positive for *C. trachomatis*.

Despite these results, in our experience we found only one positive urine specimen. All samples were collected in duplicate and tested for other pathogenic microorganisms: we found that 31.96% of the positive samples showed a multiple infection (44.5% with *U. urealyticum* and 19.22% with *Candida albicans*), while 68.04% exhibited a single infection only. We have noted in these three years an increase in infection: in 2003 the prevalence of *C. trachomatis* was 1.8%, whereas in 2006 it had increased to 3.23%. This study showed that our positive specimens are lower than those reported in Spain (Vall-Mayans *et al.* 2004) and in Italy (Grio *et al.* 2004). Because *C. trachomatis* is an obligate intracellular bacterium, very often infections are asymptomatic although complications of symptomatic and asymptomatic infections are the same. The PCR technique is a useful tool for population-based screening purposes in healthcare institutions although it can be expensive and needs trained workers.

Lately, many young people from Eastern Europe and from African countries have migrated to

Sardinia and we think that the distribution of *C. trachomatis* and STDs may increase. This emphasizes the need for a large study to evaluate the presence of *C. trachomatis*.

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