

## SEX WORKERS

*Chlamydia trachomatis* in female sex workers in Belgium: 1998–2003

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**Objective:** We analysed the results of a 6 year screening period for *Chlamydia trachomatis* in a group of female sex workers (FSW) of all ages in Ghent, Belgium.

**Methods:** They were tested in the context of an outreach health programme for sex workers. *C trachomatis* was tested by Cobas Amplicor CT/NG PCR.

**Results:** In the 6 year period, 1643 tests were performed on 950 different sex workers (nationality: Belgian 60.3%, other western European (mostly French) 21.0%, African 12.4%, eastern European 3.0%, other 3.3%; workplace: bar/sauna 49.0%, private homes 31.8%, windows 18.2%, and escorts 1.0%). Baseline prevalence (only considering results of first test) was 70/950 or 7.4% (95% CI 5.7 to 9.0). The incidence rate was 98 episodes in 1347 person years or 7.3/100 person years (95% CI 5.9 to 8.7). There was a strong age effect. There was no clear relation with nationality or the workplace.

**Conclusions:** The prevalence was higher than in general populations selected in Belgium, Britain, and the Netherlands. Since younger age is a risk factor for *C trachomatis*, it is very important to contact these women as soon as possible when they enter the trade. General screening for *C trachomatis* in young women is not common practice in Belgium. Sex workers often do not tell doctors about their work and will therefore not be screened unless in the context of specific outreach projects.

Infections by *Chlamydia trachomatis* are an important public health problem since they can cause complications such as pelvic inflammatory disease (PID), chronic pelvic pain, ectopic pregnancy and infertility.<sup>1</sup> Screening for genital *C trachomatis* infection is considered as effective to reduce these complications.<sup>2</sup> In this study we analysed the results of a 6 year screening period for *C trachomatis* in a group of female sex workers (FSW) of all ages in Ghent, Belgium.

**METHODS**

In the context of an outreach health programme for sex workers in Ghent, Belgium, and surroundings,<sup>3</sup> *C trachomatis* testing is performed in the following situations: on first contact, as part of basic STI screening; after a perceived risk—for example, condom breakage, when signs and symptoms are present. Those positive were treated or referred for treatment. The importance of partner treatment was emphasised and on many occasions we handed out a prescription for the epidemiological treatment of private partners. Since 1998, *C trachomatis* has been tested by the Cobas Amplicor CT/NG PCR (Roche Diagnostics) done on first void urine samples according to the manufacturer's instructions.

When comparing the results with other studies, it was adjusted for age.

**RESULTS**

In a 6 year period, 1643 tests were done on urine specimens from 950 different sex workers. Most tests were performed on

non-symptomatic women. The nationality of the sex workers is Belgian 60.3%, other western European (mostly French) 21.0%, African 8.2%, Moroccan 4.2%, eastern European 3.0% and other 3.3%. Their workplace is bar/sauna 49.0%, private homes 31.8%, windows 18.2%, and escorts 1.0%.

When only the result of the first test taken by the project is considered, we find 70 positive tests in 950 women, or a baseline prevalence of 7.4% (95% CI: 5.7 to 9.0).

The age when the first test was positive is shown in table 1. There is a strong age factor.

There is no clear relation to nationality or the workplace.

Considering all tests, one positive test was found in 75 people, two positive tests in 11, three positive tests in one person, and four positive tests in one, bringing the total of positive tests to 104. When reviewing individual case histories, we calculated that the 104 positive tests reflected at least 98 different *C trachomatis* episodes.

We can estimate the number of person years by counting the number of years in which at least one test was carried out on a woman. This gives us 98 episodes in 1347 person years or an incidence rate of 7.3/100 person years (CI95%: 5.9 to 8.7). The evolution over time is given in table 2.

**DISCUSSION**

The number of people tested for *C trachomatis* rose gradually. This was the result of the extension of the team in 2000, enlarging the capacity for testing and to the phenomenon of increased testing after condom failure, which was actively promoted by the project. The development of reliable PCR tests on urine lowered the barrier for screening, especially in this population, where most tests are sampled in outreach conditions.

To estimate the baseline prevalence of *C trachomatis* of the sex workers in the area we analysed the results of those who had their first test in the project at any moment in the 6 year period of observation. These women were new to the project and represented sex workers who were not yet influenced by the project. Every year, more than half of all sex workers visited by the project are new, which reflects the high turnover in this group.

To estimate the incidence rate, we assumed that when someone was tested in a year, this counted for one person year of observation. If someone had more than one positive test, the decision was made whether or not this reflected one or more episodes.

Incidence could be underestimated if the practice of self treatment or prophylactic treatment is widely spread. In our study with mainly European women, these practices are rare and will therefore hardly influence our estimate.

The baseline prevalence rate of 7.4% (95% CI: 5.7 to 9.0) was lower than in immigrant sex workers (n = 101) in Italy<sup>4</sup> (11% after correction for age), and in registered sex workers (n = 354) in Mexico<sup>5</sup> (14.5% after adjustment for age). It was

**Abbreviations:** FSW, female sex workers; PCR, polymerase chain reaction; PID, pelvic inflammatory disease

**Table 1** Positive *C trachomatis* on first test of FSW in Belgium in relation to age (n = 920)

Age group	Test positive (n)	(%)	95% CI	Total
<20	15	15.0	8.0 to 22.0	100
21–29	40	8.3	5.0 to 10.7	484
>29	12	3.6	1.6 to 5.6	336
Total	67	7.3	5.6 to 9.0	920*

$\chi^2$ : p<0.001.

\*No age available for 30 women.

**Table 2** Incidence rates for *C trachomatis* in FSW in Belgium 1998–2003

	No of people tested	No of episodes	No of episodes/ No of people tested	95% CI
1998	122	11	9.0%	3.9 to 14.1
1999	143	13	9.1%	4.4 to 13.8
2000	210	13	6.2%	2.9 to 9.4
2001	263	21	8.0%	4.7 to 11.3
2002	294	20	6.8%	3.9 to 9.7
2003	315	20	6.3%	3.7 to 9.0
	1347	98	7.3%	5.9 to 8.7

### Key messages

- The prevalence of *C trachomatis* in female sex workers in Belgium is higher than in women of comparable age in the general population
- Screening of sex workers for *C trachomatis* should start from the very beginning of their starting work in sex industry

higher than reported in the Czech Republic<sup>6</sup> (5.5%, not corrected for age). The prevalence was higher than in populations selected in general practices in Belgium<sup>7</sup> (12.4% v 6.6% in 18–22 year olds, 7.9% v 5.8% in 23–27 year olds, and 4.7% v 3.3% in 28–40 year olds), in home obtained urine specimens for the general population in Britain<sup>8</sup> (11.5% v 3.0% in 18–24 year olds, 5.6% v 1.7% in 25–34 year olds and 3.5% v 0.6% in 35–44 year olds), and the Netherlands<sup>9</sup> (15.0% v 2.4% in 15–20 year olds, 9.3% v 4.4% in 21–25 year olds, and 5.3% v 2.5% in 31–35 year olds).

Age was the strongest risk factor for *C trachomatis*. Young women in general have the highest chlamydia incidence, which is related to their experimental phase in forming sexual relationships. For sex workers, the risk of sex work adds to the risk in their private life.

Over the 6 year period, there was no clear tendency of changing prevalence. Only a small fraction of the total number of women had a yearly test in the project. The reason for this is the high turnover of this population. There is a constant influx of new women and many women leave the trade after some time. Since younger age is a risk factor for *C trachomatis*, it is very important to contact these women as soon as possible when they enter the trade. Risks outside of sex work should be discussed<sup>10</sup> and partners treated.<sup>11</sup> Good communication is a prerequisite. General screening for *C trachomatis* in young women is not common practice in Belgium. Sex workers will often not tell the doctor about their work in the sex industry, and will therefore not be screened unless in the context of specific outreach projects.

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RM is the principal investigator; LVR performed and interpreted the tests; AT collected most of the samples.

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