In China, *Chlamydia trachomatis* infections are endemic in the general population, but most infections are found in specific risk groups, such as female sex workers. The most prevalent *C. trachomatis* genovar strains, as defined by ompA genotyping, were described to be E, D, and F, which are also common in high risk groups in other parts of the world. We wondered whether by using high resolution multilocus sequence typing (MLST) we could distinguish distinct new CT strains in China.

In this study we investigated Chinese strains from 101 heterosexual visitors of the sexually transmitted infections (STI) clinic in Nanjing using MLST. These strains were compared with 256 typed strains from heterosexual visitors of the STI clinic in Amsterdam, the Netherlands. Epidemiological data were obtained from structured questionnaires.

Full MLST data were obtained for 90 samples from 58 men and 32 women from Nanjing, showing 54 sequence types. These types were dispersed over 5 *C. trachomatis* clusters in a minimum spanning tree. When combining MLST data from the Chinese samples with the Dutch samples, distinct new clusters for Nanjing appeared, but some Chlamydia strains clustered with and thus were identical to those from Amsterdam. More than half of the Nanjing participants paid or received money for sex in the previous 6 months. None of the patient characteristics was related to a specific Chlamydia cluster. High resolution typing revealed both distinct and shared *C. trachomatis* strains in China. These shared strains proved to be highly prevalent among heterosexuals in all countries investigated so far, using this MLST typing. Geographical variation in circulating *C. trachomatis* strains could not have been detected using ompA genotyping only.

**Conclusion** Baseline CT OmpA genotype did not predict repeat CT detection. Most repeat CT infection detections were new infections with a different CT strain. Genotyping will be a useful tool in understanding the origins of repeat CT infection detection after treatment.

**P3.259** **SIMILAR CHLAMYDIA TRACHOMATIS BACTERIAL LOAD IN PATIENT SAMPLES FROM STI-CLINIC AND POPULATION-BASED SCREENING**


1 A Dirks, 1 A A T P Brink, 1A Spoksnijder, 1N H T M Dukers-Muijres, 1P F G Wolffs, 1C J P A Hoesbe, 1Department of Medical Microbiology, Maastricht University Medical Center, Maastricht, The Netherlands; 2Department of Sexual Health, Infectious Diseases and Environmental Health, Public Health Service South Limburg, Geleen, The Netherlands; 3Department of Public Health, Laboratory, Cluster Infectious Diseases, Public Health Service Amsterdam, Amsterdam, The Netherlands

**Introduction** *Chlamydia trachomatis* (CT) load is suggested to be higher in symptomatic patients. This may have implications for screening policies in target groups that differ in their percentage of symptomatic patients. Here, we hypothesise that population-based screening yields lower CT loads as it is thought to include mainly asymptomatic patients. The objective of this study was to compare the CT load between 2 cohorts of CT positive patients (1) those attending a sexually transmitted infection (STI)-clinic and (2) those participating in the Dutch population-based screening (CSI), thereby taking into account symptoms as well as other determinants relevant for bacterial load.

**Methods** The CT load from 1286 CT-positive participants from the CSI-cohort (59.8%; 562 women) and STI-clinic in South Limburg (40.2%; 312 women) was determined using real-time qPCR. CT load was based on the copy number of the major outer-membrane protein (MOMP) gene normalised per copy number of eukaryotic cells (HLA) gene.

**Results** The overall mean logarithmic bacterial load was 1.50 MOMP/HLA for women and 1.15 MOMP/HLA for men. For both sexes there was no independent association between cohort type and mean logarithmic CT load (women, p = 0.86; men, p = 0.22). Symptoms were independently associated with load. Load was higher in women reporting dysuria (1.65 MOMP/HLA) than in women without dysuria (1.46 MOMP/HLA) (p = 0.027). For men, load was higher when reporting frequent urination (1.56 MOMP/HLA) than without this symptom (1.10 MOMP/HLA) (p = 0.015). Contrary to the expectation, these symptoms were reported in the CSI cohort more often than in the STI clinic cohort (women: 66.8 and 13.6%; men 16.5 and 7.3%). None of the other determinants were found to be associated with load.

**Conclusion** Our results indicate a similar bacterial *C. trachomatis* load in the general population and in a high-risk population, highlighting the relevance of population-based CT-screening.

**P3.260** **DIFFERENCE IN DISTRIBUTION OF CHLAMYDIA TRACHOMATIS GENOTYPES AMONG DIFFERENT PROVINCES: A PILOT STUDY FROM FOUR PROVINCES IN CHINA**


Y Han, Y Yin, M Shi, M Zheng, S Chen, Z Xiang, N Jiang, X Chen. National Center for STD Control & Chinese Academy of Medical Sciences, Beijing, China

The objective of this study was to assess the distribution of Chlamydia trachomatis (*C. trachomatis*) genovars in male sexually transmitted disease (STD) clinic patients from 1 province in eastern China (Jiangsu) and 3 provinces in southern China (Guangdong, Guangxi, and Hainan). Urine specimens (n = 140) were collected...
from 46 public STD clinics in the 4 provinces. Specimens that tested positive for *C. trachomatis* by polymerase chain reaction were genotyped for the infecting *C. trachomatis* strain by amplifying and sequencing the genovar-specific ompA gene, which encodes the chlamydial major outer membrane protein. Nine *C. trachomatis* genovars were identified from 129 specimens; they consisted of the F (25.6%, n = 33), E (17.1%, n = 22), J (16.3%, n = 21), D (15.5%, n = 20), G (11.6%, n = 15), K (5.4%, n = 7), H (3.9%, n = 5), I (1.6%, n = 2), and B (0.8%, n = 1) genovars. Nine genovars were found in specimens from Guangxi province, 6 were found in specimens from each of Guangdong and Hainan provinces, but only 5 were found in specimens from Jiangsu province. Significant differences were observed in *C. trachomatis* genovar distributions between different provinces: G/Ga was absent among male STD clinic patients (MSPs) from the eastern province of Jiangsu (Fisher exact test = 0.056), while being prevalent in the 3 southern provinces.

**P3.261** GLOBAL MULTIPLE SEQUENCE TYPE (MLST) ANALYSIS OF CHLAMYDIA TRACHOMATIS STRAINS FROM 16 COUNTRIES

'I Isaksson, 1R Bom, 1I Saleh, 2R Hermann, 3Brusten. 1Department of Clinical Microbiology, Uppsala, Sweden; 2Public Health Laboratory, Public Health Service of Amsterdam, Amsterdam, The Netherlands

**Background** The *Chlamydia trachomatis* MLST database was established in 2007 and is based on five target regions (non-housekeeping genes) and the conventional *ompA* gene. It enables worldwide epidemiological analyses.

**Methods** Samples were included from 11 studies focusing on specific risk groups and with different study objectives. Geographical distribution of MLST profiles was carried out and eBURST analysis identified genetic founders.

**Results** A total of 414 MLST profiles were recognised from 2087 entries. Polymorphism of target regions was reflected in the distribution of MLST profiles was carried out and eBURST analysis identified genetic founders. The genetic diversity was much lower in the MSM clusters compared with heterosexuals. There were 16 countries from which samples originated, the majority coming from the Netherlands 39%, Sweden 16% and Norway 12%, but also samples from countries in North and South America, Africa and other European countries. Overall 605 (29%) of the database samples originated from men having sex with men (MSM) while the remaining samples were assumed to be from heterosexuals.

Singletons or small clusters emerged from 577 of the MLST profiles that were found 1–9 times while 31 profiles were found 10–43 times each. There were 8 profiles that predominated and were each found between 83 and 140 times and constituted large clusters that comprised typed isolates from two or more anatomical sites of the same male individual submitted within a one-month period were compared using CLUSTALW. Thirteen of 14 alleles compared were at the same nucleotide. The remaining pairs showed 88.4%, 98.2%, 97.8%, 96.9% and 75.1% (*ompA*) similarity.

**Conclusion** Worldwide a few *C. trachomatis* MLST profiles predominate. Different MLST profiles predominate among MSM and heterosexuals.

**P3.262** COMPARISON OF URINE SAMPLES AND PENILE SWABS IN THE DETECTION OF HUMAN PAPILLOMAVIRUS IN MEN USING THE SPF10-DEIA-LiPA25 SYSTEM

'F M P A Koenen, 1P G Wolffs, 1A T P Brink, 1N H T M Dukers-Muijers, 2W G V Quint, 1C A Bruggeman, 1C J P A Hoebe. 1Department of Medical Microbiology, School of Public Health and Primary Care (CAPPH), Maastricht University Medical Center, Maastricht, The Netherlands; 2Department of Sexual Health, Infectious Diseases and Environment, South Limburg Public Health Service, Geleen, The Netherlands; 3ODI Diagnostic Laboratory, Rijswijk, The Netherlands

**Background** Penile swab sampling is the gold standard when testing for human papilloma virus (HPV) in men. Urine could provide a more convenient sampling material. Therefore we compared the detection and typing of HPV in urine samples and penile swabs using a highly sensitive method.

**Methods** First void urine and self-obtained penile swabs were collected from 120 men visiting a Sexually Transmitted Infections (STI) clinic in South Limburg, The Netherlands. When exclusion criteria were met, the results of 111 men (mean age 29.4 years) were analysed. Broad-spectrum HPV DNA amplification and genotyping were performed using SPF10-DEIA-LiPA25 system (Labo Bio-Medical Products, Rijswijk, The Netherlands). There are 12 high risk HPV types (hrHPV), 5 possible hrHPV types and 8 low risk HPV types (lrHPV) detectable by SPF10LiPA25.

**Results** HPV DNA was found in 75 (67.6%) men. In 73 men HPV DNA was detected in the penile swab or both samples and in two men HPV DNA was detected only in the urine sample. Sixty-six paired samples were concordant in being HPV positive (n = 30) or negative (n = 36). Eleven of the 30 matching samples were discordant in their genotypes, fourteen pairs were comparable (2 geno-identical type) and five pairs were discordant in genotypes. Three of these discordant and one comparable urine sample contained (possible) high risk types which were not found in the swab. Furthermore, the two positive urines with a negative swab contained (possible) high risk types as well.

**Conclusion** Urine samples are not comparable to penile swabs in the detection of HPV in men. However, in the urine sample of six men high risk types were found that could not be detected in the penile swab alone. This could be an indication of an additional value of the urine sample aside the penile swab in the detection of HPV in men.