Clinical sciences poster session 1: *Chlamydia trachomatis, Neisseria gonorrhoeae* and related syndromes

P3-S1.01 PREVALENCE OF GENITAL CHLAMYDIA AND GONOCOCCAL INFECTIONS IN AT-RISK WOMEN IN THE KUMASI METROPOLIS OF GHANA

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Background To study the prevalence of genital chlamydia and gonococcal infections in women at risk of acquiring sexually transmitted infections in the Kumasi metropolis, Ghana.
Methods Structured interviews and clinical examination of participants aged between 18 and 35 years (inclusive) were carried out. Other inclusive criteria were having at least three sexual acts per week and having had at least two sexual partners in the preceding 3 months. Vaginal swabs were also obtained to test for gonorrhoea and chlamydia infections.
Results One thousand and seventy women participated in the study. Genital chlamydia infection was found in 4.8% of participants whilst gonococcal infection was found in 0.9% of participants.
Conclusion The prevalence of genital chlamydia and gonococcal infections was low in these at-risk women. The prevalence is also lower than reported in other female populations in the country.

P3-S1.02 EVALUATION OF SCREENING TESTS FOR *CHLAMYDIA TRACHOMATIS*: BIAS ASSOCIATED WITH THE PATIENT INFECTED STATUS ALGORITHM

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This study illustrates the bias associated with the use of an estimation approach called the patient infected status algorithm (PISA), which has been recently introduced and is increasingly used to produce sensitivity, and specificity estimates for *Chlamydia trachomatis* sand *Neisseria gonorrhoea* screening tests. PISA-based estimates have been published in the medical and microbiological literature and have been included in FDA approved package inserts of nucleic acid amplification tests for detecting *Chlamydia trachomatis*. In this study, we show that the PISA is an estimation procedure that can produce biased estimates of sensitivity, specificity and prevalence parameters. In a series of simulated scenarios we considered, none of the 95% CIs for PISA-based estimates of sensitivity and prevalence contained the true values. In addition, we show that the PISA-based estimates of sensitivity and specificity change markedly as the true prevalence changes. Thus, like earlier estimates such as discrepant analysis based estimates and unadjusted culture-based estimates of sensitivity and specificity, PISA based estimates are also biased.

P3-S1.03 MIXED INFECTIONS IN WOMEN WITH CHLAMYDIAL GENITAL INFECTION

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Background To study the prevalence and structure of mixed infection in women with Chlamydial genital infection.
Methods The object of research was 80 women revealed to have Chlamydial genital infection. Age varied from 16 to 47 making in average 24.2+1.6. 37 (46.3%) women of 80 patients needed medical care due to complaints, 36 (45%) women were examined due to inflammatory process in sexual partner (husband), in 7 (8.7%) cases clamidiosis was revealed during the small pelvis surgery. During the examination 23 (28.8%) patients did not complain, other patients (71.2%) complained of lower abdominal pains (45%), itching or discomfort in urethra (31.3%), pathologic discharge from genital tracts (38.7%), colic when urinating (22.5%), infertility (11.3%), menstrual abnormalities (3.7%), periodic raise of temperature (2.5%).
Results Complex bacteriological research showed that only 28 (35%) women had Chlamydial genital infection as a mono-infection, in other cases the inflammatory process was caused by mixed-infection. By comparison of clinical data with the results of bacteriological investigation it was concluded that only 34 (42.5%) women of all undergone the examination had the combination of pathogenic and conditionally pathogenic bacteria, 28 (35%)—association of aerobes and anaerobes, 9 (11.3%)—pathogenic bacteria and fungi of Candida genus, 2 (2.5%)—conditionally pathogenic fungi. 29 (36.3%) women had the mixed infection as combination of two infections (*C trachomatis* +1 agent), 23 (28.7%)—three and more infections. As the accompanying infection *U urealyticum* was the most common—in 20 (25%) patients with Chlamydial genital infection, *T vaginalis*—in 19 (23.8%), *N gonnorhea*—in 13 (16.3%), *S aureus*—in 10 (12.5%), *C albicans*—in 9 (11.3%), *M hominis*—7 (8.7%), *G vaginalis*—6 (7.5%).

P3-S1.04 ABNORMAL PROSTATE CANCER MARKERS IN A MAN WITH SYMPTOMATIC *C TRACHOMATIS* INFECTION

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Objectives In men ascending *Chlamydia trachomatis* (CT) infection may result in the inflammatory process in the prostate. It has been suggested that chronic inflammation and infectious agents related to prostatitis may be involved in prostate cancer (PrCa) susceptibility. Nevertheless, the role of CT in the pathogenesis of this common among sexually active men morbidity is still not clear. Better understanding of the host's response to CT and the precise pathways in the PrCa development are of great interest. Up to now prostate biopsy (PBx) remains the only test that can confirm the diagnosis of PrCa. Serum prostate-specific antigen (PSA) test has been used worldwide to screen men for PrCa but can results in a significant proportion of negative PBx and prostate cancer antigen 3 (PCA3, first catch of the urine collected after prostate massage) test may be of valuable help in some PSA quandary situations. We present a clinical case with symptomatic CT infection affecting the PrCa diagnosis.
Methods In October 2010, a white man 38 y.o. with a history of unprotected sex and followed lower urinary tract symptoms (LUTS) and erectile dysfunction for more than 3 months was applying for STIs and PrCa testing. CT infection was detected by RT-PCR. Physical and digital rectal examinations (DRE) were performed and the number of WBC in the prostate secretion was counted. The results of PSA and PCA3 tests resulted in PBx.
Results The results are presented in the Abstract P3-S1.04 table 1. CT positivity was assessed in St. Petersburg by in-house RT-PCR test that was confirmed by an internationally validated molecular test as it has been described elsewhere. No other STIs were detected. The prescribed treatment succeeded: LUTS were released, no CT infection was detected. Interestingly, serum PSA tests showed abnormal results before and 1 month after antibacterial treatment.

A cut-off score was exceeded in an additionally prescribed PCA3 test. PBx was performed but histological examination revealed no evidence of PCa but prostate inflammation.

Abstract P3-S1.04 Table 1 Abnormal prostate cancer markers in a man with symptomatic *C trachomatis* infection

		Follow-up visits	
	First visit	1 month	3 months
CT infection, tested by RT-PSR	Positive	Negative	Negative
Symptomatic	Yes	No	No
Digital rectal examination	Abnormal	Abnormal	Abnormal
WBCs, counted in hpf	30–40	0–2	0–1
PSA test, 0–4 ng/ml	13.9 Abnormal	9.8 Abnormal	1.5 Normal
PCA3 test, a cut-off score of 35		38 Abnormal	
Prostate biopsy, to diagnose cancer		Negative	

Conclusions Further studies to evaluate the time course of prostatitis/STIs on PrCa risk, particularly among a young cohort of men, have been warranted. New diagnostic markers are needed to investigate the pathways between the acquisition of CT and its impact on the prostate. This is the first report on detection of abnormal PSA and PCA3 tests in a Chlamydia-infected man suffering from LUTS, while no PrCa was histologically detected.

P3-S1.05 INCIDENCE OF STI IN PATIENTS WITH CHRONIC PROSTATITIS

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Chronic prostatitis is a common problem among male patients. Some authors indicate that 30–40% of males have chronic prostatitis when they are 20–40 years old. Last years the tendency to begin at the earlier age is seen in patients with prostatitis. STI should be excluded while examining of patients with prostatitis. We observed 96 sexually active men with chronic prostatitis (middle age 34.2±12.7 years). All patients where checked up for STI. Microscopy and cultural method where used to diagnose gonorrhoea and trichomonas infection, PCR for chlamydia and herpes infection and Mycoplasma IST test system to diagnose mycoplasma infection. STI where founded in 44 patents (45.8%). *Neisseria gonorrhoea* was founded in 10 patients (10.4%), *Trichominiasis vaginalis*—in two patients (2,0%), *Mycoplasma hominis*—in seven patients (7.3%), Herpes genitalis—in two patients (2.0%), *Chlamydia trachomatis*—in 23 patients (23.9%). Still in 54.2% of patients the reason remained unknown. Patient with STI should be recommended to check up for all STI. As far as association with STI is quite common it is necessary to study their possible role in the development of chronic prostatitis. *Chlamydia trachomatis* infection seems to be associated with chronic prostatitis more commonly.

P3-S1.06 ABSTRACT WITHDRAWN

P3-S1.07 *CHLAMYDIA TRACHOMATIS* SEROVAR DISTRIBUTION AND OTHER SEXUALLY TRANSMITTED COINFECTIONS IN SUBJECTS ATTENDING A STD OUTPATIENTS CLINIC IN ITALY

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Background *Chlamydia trachomatis* is the leading cause of bacterial sexually transmitted diseases (STDs) in industrialised countries. omp1 (ompA), the gene encoding the major outer membrane protein (MOMP), has been widely used for molecular epidemiology, because it contains four spaced variable domains.

Methods A total of 1625 patients attending the STD Outpatients Clinic of St. Orsola University Hospital of Bologna, Italy were enrolled for this study. Each patient was clinically visited, bled in order to perform serological tests, than three urethral or endocervical swabs were obtained. Two swabs were cultured for the detection of *C trachomatis* and *Neisseria gonorrhoeae*, whereas the third was stored at −80°C. When a positive result was obtained by *C trachomatis* culture, the corresponding frozen sample was withdrawn, its DNA was extracted by VERSANT kPCR SP Module (Siemens Healthcare Diagnostics Inc.) and used as a template for omp1 gene fragment amplification. PCR products were purified and both strands were sequenced. Nucleotide sequences were compared to omp1 sequences using the BLAST search tool at the National Center for Biotechnology Information. The sequences were manually aligned using BioEdit (version 7.0.0) software. χ^2 Test was used and a p value of <0.05 was considered statistically significant.

Results *C trachomatis* was detected in 103 out of 1625 (6.3%) swabs by culture. Prevalence was significantly higher in men ($p<0.01$), with 60 positives out of 525 tested (11.4%), than in women (43/1100; 3.9%), as well as presence of clinical symptoms: 81.7% (49/60) of infected men and 44.2% of infected women (19/43) were symptomatic. Also prevalence of STD coinfections was significantly higher ($p<0.01$) in men (35/60; 58.3%) than in women (8/43; 18.6%). In our population the most common serovar was E, with a prevalence of 38.8%, followed by G (23.3%), F (13.5%), D/Da (11.6%), and J (4.8%). Statistically significant differences ($p=0.042$)

Abstract P3-S1.07 Table 1 Primary demographic, epidemiological, and clinical data and rates of infection with *C trachomatis* serovars for male and female patients

	Sex No (%) of patients		
	Males	Female	p Value (χ^2 test)
Place of birth			
Italy	42 (70.0)	22 (51.2)	0.052
Other	18 (30.0)	21 (48.8)	
Symptoms			
Yes	49 (81.7)	19 (44.2)	0.000*
No	11 (18.3)	24 (55.8)	
N gonorrhoeae coinfection			
Yes	27 (45.0)	3 (7.0)	0.000*
No	33 (55.0)	40 (93.0)	
T pallidum coinfection			
Yes	5 (8.3)	2 (4.7)	0.696
No	55 (91.7)	41 (95.3)	
Human papillomavirus coinfection			
Yes	6 (10.0)	3 (7.0)	0.592
No	54 (90.0)	40 (93.0)	
HIV coinfection			
Yes	5 (8.3)	0 (0,0)	0.073
No	55 (91.7)	43 (100)	
C trachomatis serovar			
B	0 (0,0)	2 (4.7)	0.042*
D/Da	10 (16.7)	2 (4.7)	
E	24 (40.0)	16 (37.2)	
F	11 (18.3)	3 (7.0)	
G	10 (16.7)	14 (32.6)	
H	0 (0.0)	2 (4.7)	
I/Ia	2 (3.3)	0 (0.0)	
J	2 (3.3)	3 (7.0)	
K	1 (1.7)	1 (2.3)	

*Statistically significant ($p<0.01$).