P08.21 SEX AND PELVIC INFLAMMATORY DISEASE: WHAT'S THE RELATIONSHIP? CASE-CONTROL STUDY

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Background Pelvic inflammatory disease (PID) results from infection ascending to the upper female genital tract. The timing of progression of untreated infections is poorly understood and difficult to study prospectively. We investigated temporal relationships between recent sexual partnerships and PID caused by the sexually transmitted infections (STI) *Chlamydia trachomatis* or *Neisseria gonorrhoeae*.
Methods We did a case-control study, using case records. Cases were women with clinically diagnosed PID and a positive *C. trachomatis* or *N. gonorrhoeae* test result. Control groups were women who presented on the same day with: control1) clinical PID and negative test results; control[2]) no clinical PID and negative test results; control3) uncomplicated *C. trachomatis* or control4) uncomplicated *N. gonorrhoeae* infection. We used survival methods for statistical analysis.
Results We analysed data from 356 women: 72 cases, 83 control1, 75 control[2], 68 control3 and 58 control4. Cases and women in control3 and control4 were younger than women in control1 or control[2] ($p < 0.001$), intrauterine device use and dates of last menstruation before attendance were similar in all groups. Women with chlamydial or gonococcal PID (cases) had more recently changed sexual partners (median 154 days, IQR 61–736) than those with clinical PID but no infection (control1, median 367 days, IQR 94–1419, $p = 0.082$). The time from the start of the most recent sexual partnership to symptom onset was shorter in cases (median 121 days, IQR 47–695) than control1 (median 366 days, IQR 104–1552, crude hazard ratio, HR 0.65, 95% CI 0.46–0.92). After adjusting for age, this association was weakened (adjusted HR 0.81, 95% CI 0.56–1.17).
Conclusion Differences in the course of STI- and non-STI associated PID were mainly due to age. Further studies to elucidate the course of acute STI and ascending infection will help to understand the impact of screening and treatment interventions on PID prevention.
Disclosure of interest No funding was received for this study.

P08.22 HOW HIGH IS HIGH RISK? SEXUAL BEHAVIOUR AND CHLAMYDIA INFECTIONS IN WOMEN ATTENDING GENITOURINARY MEDICINE CLINICS

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Introduction Population based surveys provide valuable data for the general population but most testing for sexually transmitted infections (STI) is done in health care settings. The objective of this cross-sectional study was to describe sexual behaviour characteristics of women attending genitourinary medicine (GUM) clinics and compare them with nationally representative data.
Methods This study was conducted from January 2014 to March 2015 in two London clinics. Women were eligible if they were aged 16–29 years and able to provide informed consent. Participants completed a web-based questionnaire that included several questions from the third British National Survey of Sexual Attitudes and Lifestyles (Natsal-3). We compared clinic attenders with women aged 16–24 years in the general population, surveyed in Natsal-3 in 2010–2011.
Results We enrolled 1808 women, of whom 1806 provided clinical data and 1792 completed the questionnaire. Most (61.9%) were 16–24 years old and from white ethnic groups (48.8%). Four fifths reported having ever been tested for chlamydia with an average of 3.3 (SD 1.8) tests per participant. One third had ever been diagnosed with chlamydia. Compared with women age 16–24 years in Natsal-3, clinic attenders were more likely to report ≥5 lifetime partners (47.0% vs. 37.3%, $p < 0.001$) and ≥2 partners in the past year (51.8% vs. 26.7%, $p < 0.001$), but fewer sex acts in the past four weeks (4.1, SD 4.7 vs. 5.8, SD 6.6, $p < 0.001$). 43% of clinic attenders had had at least one concurrent relationship.
Conclusion This study provides detailed data about differences in sexual activity and practices between women attending clinics and those in the general population. These results can be used in studies to understand the impact of interventions such as point-of-care testing to improve chlamydia screening outcomes.
Disclosure of interest statement This study was funded by the UK Technology Strategy Board; HHL is an equity holder of the company Diagnostics for the Real World.

P08.23 SERO-EPIDEMIOLOGICAL ASSESSMENT INDICATES HIGH PREVALENCE OF *C. TRACHOMATIS* IN SAMOAN WOMEN WITH INFERTILITY

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Introduction *Chlamydia trachomatis* (CT) is one of the most common bacterial sexually transmitted infections in the world. Due to the asymptomatic nature of the disease, the infection is frequently undiagnosed resulting in the development of serious sequelae such as pelvic inflammatory disease, ectopic pregnancy and tubal infertility in women. The prevalence of CT infection in Samoa was previously estimated to be 30.9%, based on pregnant women attending antenatal clinics. The high prevalence of CT infection may imply a high probability of increased risk of sequelae such as infertility in Samoan women.
Methods Serological prediction of CT infertility as indicated by titers of serum antibodies to CT in infertile women was conducted using a series of commercial tests such as MEDAC and ANilabsystems serology kits. The correlation between self-reported infertility and epidemiological factors to serologically predicted CT infertility was determined. Self reported infertility in women was defined based on their patient history as the inability to get pregnant after trying for more than 1 year.

Results Women who self-reported infertility had a high prevalence of serologically predicted chlamydial infertility (36%), which was significantly different from fertile women (18%). The study accounted for confounders using stepwise multiple logistic regression analysis (BMI, number of cigarettes per day, age). MEDAC CT IgG p-ELISA correlated with self-reported infertility (OR 2.32, 94% CI 1.25–4.33; P = 0.01), while Anilabsystems CT IgG ELISA correlated with the current infections diagnosed by PCR (OR 1.93, 95% CI 1.11–3.37; P = 0.02).
Conclusion The study highlights the importance of serological tests in potentially identifying women with CT-related infertility. The high prevalence of CT and women testing positive in CT infertility tests suggests that CT could be a major contributory factor to infertility, and a major unrecognised disease burden in the Samoan population.
Disclosure of interest statement No conflicts of interest.

P08.24 ALTERNATIVE EVIDENCE SOURCES PRESENT A CONSISTENT PICTURE OF THE POPULATION EXCESS FRACTION (PEF) OF PELVIC INFLAMMATORY DISEASE CAUSED BY *CHLAMYDIA TRACHOMATIS* INFECTION IN ENGLAND

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Introduction Pelvic Inflammatory Disease (PID) is a leading cause of both Tubal Factor Infertility (TFI) and Ectopic pregnancy. *Chlamydia trachomatis* (CT) is an important risk factor for the development of PID but it is also caused by other infections. The extent of the role of CT in the aetiology of PID is unclear and knowledge of its role is critical for assessing the efficacy and cost-effectiveness of CT screening.
Methods We define the population attributable fraction as the population Excess fraction (PEF) 'the estimated proportion of the disease that would be removed by eliminating the exposure from the population'. We consider seven separate methods of estimating age-group specific PEFs using a variety of data-sources. Estimates are based on evidence from routine data sources, survey's, case-control studies and randomised controlled trials. Estimation is carried out using a Bayesian approach. This method ensures that all of the uncertainty in the data and estimates for all parameters is fully propagated into the estimates of PEF.
Results There is a high degree of consistency between these estimates of PEF. We estimate that in women aged 16–44 around 20% of PID is caused by CT in England. However, this could be as low as 5% or as high as 40%. There is a steep decline in PEF with age with the PEF dropping by a factor of around 5-fold between younger and older women.
Conclusion There is good evidence that CT plays an important role in the development of PID, especially in younger women. Future studies of the relationship between CT and PID should focus more on the relationship between risk and age.
Disclosure of interest statement This study was funded by the Medical Research Council grant G0801947. No pharmaceutical grants were received in the development of this study. PH has received funding from Cepheid directly and indirectly for lecturing on point of care testing and undertaking research on the cost effectiveness of their CT/NG assay. Has also received payment from Atlas Genetics for an article in the Parliamentary Review on the benefits of point of care technology in improving the cost effectiveness of sexual health services. Has also received an honorarium from Hologic for an education talk on STI diagnostics.

P08.25 TUBAL FACTOR INFERTILITY (TFI) EPIDEMIOLOGY IN INFERTILITY CLINIC PATIENTS

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Introduction Prevention of tubal factor infertility (TFI) is a primary objective of chlamydia prevention programs. This study aimed to describe TFI epidemiology in infertility clinic patients.
Methods Data were analysed from one site of an ongoing two-site study. Medical record data from infertile (unable to conceive for ≥12 months, no history of tubal sterilisation) women aged 19–42 yrs with an initial consultation at a private infertility practice in Birmingham, Alabama during 01/01/2011–06/30/2012 were abstracted to a standardised form. TFI was defined by report of fallopian tube occlusion on hysterosalpingogram, hydrosalpinx on pelvic ultrasound, and/or evidence of fallopian tube damage (e.g., tubal occlusion, hydrosalpinx, peritubal adhesions) on laparoscopy. Statistical tests were used to compare proportions (Fisher's exact, chi-square) and medians (Wilcoxon).
Results Eligible patients (N = 413, median age 31 yrs) included 87 black, 303 white and 23 other race women, who had been trying to conceive a median of 30 months (48 months black vs 24 months white, p < 0.001) at initial consultation. Recorded history of chlamydia and pelvic inflammatory disease (PID) were more common in black than white patients (9.2% vs 1.3%, p = 0.001; 6.9% vs 1.6%, p = 0.02). TFI was identified in 82 (19.9%) women (32.2% black vs 15.8% white, p < 0.001). Among 82 women with and 331 without TFI, a history of chlamydia was recorded in 2.4% vs 3.3% (p = 1.0), gonorrhoea in 0% vs 1.2% (p = 1.0), PID in 6.1% vs 1.8% (p = 0.047), and ectopic pregnancy in 14.6% vs 2.4% (p < 0.001).
Conclusion TFI was identified in one-fifth of infertility patients. Black women had been attempting to conceive longer before initial consultation than white women, and had a higher prevalence of TFI. Known sexually transmitted infection (STI) history was uncommon, but more prevalent in blacks. Studies using biological measures of exposure (e.g., serology) are needed to better define the proportion of TFI attributable to STIs.