Seroprevalence patterns in men should be understood. All sera were tested using two novel in-house Pgp3 ELISAs[1,2]. All sera were tested using an indirect Pgp3 ELISA (sensitivity: 73.8% in women, 44.2% in men; specificity: 97.6%)[1]. Samples with absorbance values around the cutoff value were retested using a more sensitive ELISA (sensitivity: 82.9% in women; 54.4%, in men; specificity: 97.8%)[2].

Determinants of being seropositive were explored using logistic regression among 16-44 year-old women and men in 2010/2012 (years when sexual behaviour questions were included in the survey)(n=1,402 women; 1,119 men).

Seroprevalence trends among 16-24 year-old women (n=3,361) were investigated over ten time points from 1994-2012. Trends in men were not investigated due to the lower sensitivity of the assay in men[1,2].

Survey weights were applied to correct for uneven probability of selection and non-response.

Our application of Pgp3 ELISAs demonstrates a high lifetime risk of chlamydia infection among women and a large proportion of undiagnosed infections.

A decrease in age-specific cumulative incidence following national implementation of opportunistic chlamydia screening has not yet been demonstrated.

We propose these assays be used to assess impact of chlamydia control programmes.

INTRODUCTION

• Opportunistic screening of <25 year-olds for genital Chlamydia trachomatis infection ('chlamydia') was nationally-implemented in England in 2008 but its impact is poorly understood.

• Antibodies to C.trachomatis persist following infection, thus providing a marker of past infection.

• We undertook a serial population seroprevalence study to explore the impact of screening on cumulative incidence of chlamydia as measured by C.trachomatis antibodies.

METHODS

• We used anonymised sera from participants in the nationally-representative Health Surveys for England (HSE).

• Samples were tested for C.trachomatis antibodies using two novel in-house Pgp3 ELISAs[1,2].

• All sera were tested using an indirect Pgp3 ELISA (sensitivity: 73.8% in women, 44.2% in men; specificity: 97.6%)[1]. Samples with absorbance values around the cutoff value were retested using a more sensitive ELISA (sensitivity: 82.9% in women; 54.4%, in men; specificity: 97.8%)[2].

• Determinants of being seropositive were explored using logistic regression among 16-44 year-old women and men in 2010/2012 (years when sexual behaviour questions were included in the survey)(n=1,402 women; 1,119 men).

• Seroprevalence trends among 16-24 year-old women (n=3,361) were investigated over ten time points from 1994-2012. Trends in men were not investigated due to the lower sensitivity of the assay in men[1,2].

• Survey weights were applied to correct for uneven probability of selection and non-response.

RESULTS

Figure 1: Pgp3 seroprevalence by age group and years since first sex

In HSE2010/12, Pgp3 seroprevalence among 16-44 year-olds was 24.4% (95%CI 22.0%-27.1%) in women and 13.9% (95%CI 11.8%-16.25) in men.

Seroprevalence increased with age and years since first sex (Fig.1). 33.5% (95%CI 27.5%-40.2%) of 30-34 year-old women and 18.7% (13.4%-25.6%) of 35-39 year-old men were Pgp3 seropositive.

Figure 2: Pgp3 seroprevalence by number of lifetime sexual partners (16-44 year-olds)

Figure 3: Percentage of Pgp3 seropositive participants reporting chlamydia testing and/or diagnosis

• Number of lifetime sexual partners was significantly associated with being seropositive (≥10 versus 1-4: OR 3.84 [95%CI 2.68-5.51] women, 5.95 (3.41-10.35) men (Fig.2)

• 77% of seropositive 16-24 year-olds had never been diagnosed with chlamydia; 36% had been tested, but never diagnosed (Fig.3)

DISCUSSION

LIMITATIONS

• Our analysis of trends in seroprevalence may be limited by time since implementation of the NCSP and limited sample size.

• Behavioural data were self-reported; sensitive items were collected using the self-completion booklet to minimise social desirability bias.

• Seroprevalence patterns in men should be interpreted with caution given the relatively low sensitivity of the assay in men.

CONCLUSIONS

• Our application of Pgp3 ELISAs demonstrates a high lifetime risk of chlamydia infection among women and a large proportion of undiagnosed infections.

• A decrease in age-specific cumulative incidence following national implementation of opportunistic chlamydia screening has not yet been demonstrated.

• We propose these assays be used to assess impact of chlamydia control programmes.

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Sarah C Woodhall1-3, Gillian Wills3-4, Paddy Homer5, Rachel Craig6, Jennifer S Mindel7, Gary Murphy1, Myra McClure1, Kate Soldan1, Anthony Narodine1, Anne M Johnson2

1 Public Health England, UK, 2 UCL, UK, 3 Imperial College London, UK, 4 University of Bristol, UK, 5 NatCen Social Research, UK

Joint first authors * Joint senior authors

sarah.woodhall@phe.gov.uk

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UCL

Collaborating Institutions

Imperial College London, UK, NatCen Social Research, UK, University of Bristol, UK, Public Health England, UK, Our Lady's Children's Hospital, Crumlin, Ireland, Public Health Surveillance Centre, University of Liverpool, UK, National Centre for Social Research, UK.