**SUPPLEMENTARY MATERIAL:**

**Supplementary data 1: Search strategies for databases searched**

1) Medline (Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations and Ovid MEDLINE(R) 1946 to Present):

With limits to humans and current (2nd September 2015) and English:

chlamydia trachomatis.mp. or Chlamydia trachomatis/ OR chlamydia.mp. or Chlamydia Infections/ or Chlamydia/ or Chlamydia trachomatis/ AND prevalence.mp. or Prevalence/ OR positivity.mp. OR positive.mp. OR epidemiology.mp. or Epidemiology/ OR diagnosis.mp. or Diagnosis/ OR diagnoses.mp. or Diagnosis/ OR diagnosed.mp. AND rectal.mp. OR anal.mp. OR anogenital.mp.

2) Embase, CINAHL, PsychINFO (searched simultaneously through NICE Healthcare Databases Advanced Search):

Chlamydia.ti,ab [Limit to: Publication Year 1997-2015] OR (Chlamydia AND trachomatis).ti,ab [Limit to: Publication Year 1997-2015] AND prevalence.ti,ab [Limit to: Publication Year 1997-2015] OR positivity.ti,ab [Limit to: Publication Year 1997-2015] OR positive.ti,ab [Limit to: Publication Year 1997-2015] OR epidemiology.ti,ab [Limit to: Publication Year 1997-2015] OR diagnosis.ti,ab [Limit to: Publication Year 1997-2015] OR diagnoses.ti,ab [Limit to: Publication Year 1997-2015] OR diagnosed.ti,ab [Limit to: Publication Year 1997-2015] AND rectal.ti,ab [Limit to: Publication Year 1997-2015] OR anal.ti,ab [Limit to: Publication Year 1997-2015] OR anogenital.ti,ab [Limit to: Publication Year 1997-2015]

3) Cochrane Database:

chlamydia trachomatis:ti,ab,kw Publication Year from 1997 to 2015 (Word variations have been searched) OR chlamydia:ti,ab,kw Publication Year from 1997 to 2015 (Word variations have been searched) AND prevalence:ti,ab,kw Publication Year from 1997 to 2015 (Word variations have been searched) OR positivity:ti,ab,kw Publication Year from 1997 to 2015 (Word variations have been searched) OR positive:ti,ab,kw Publication Year from 1997 to 2015 (Word variations have been searched) OR epidemiology:ti,ab,kw Publication Year from 1997 to 2015 (Word variations have been searched) OR diagnosis:ti,ab,kw Publication Year from 1997 to 2015 (Word variations have been searched) OR diagnoses:ti,ab,kw Publication Year from 1997 to 2015 (Word variations have been searched) OR diagnosed:ti,ab,kw Publication Year from 1997 to 2015 (Word variations have been searched) AND rectal:ti,ab,kw Publication Year from 1997 to 2015 (Word variations have been searched) OR anal:ti,ab,kw Publication Year from 1997 to 2015 (Word variations have been searched) OR anogenital:ti,ab,kw Publication Year from 1997 to 2015 (Word variations have been searched)

**Supplementary data 2: Data items extracted from included full text papers.**

Table: Data items extracted from included full text papers.

|  |  |
| --- | --- |
| DATA ITEM EXTRACTED | EXAMPLE OF DATA |
| Study Design Data items | |
| Study design | Cross-section studies of clinic attending populations |
| Study population type | General population, Clinic attending population, Chlamydia positive population, HIV positive population |
| Were results stratified by demographic information, e.g. age, ethnicity? | Result of test stratified by year of age or age-group. |
| Inclusion criteria data items: | |
| Country of study | See OECD defined high-income country list |
| Area in country of study | Sub-national or National |
| Start and end month and year of data collection |  |
| Minimum and maximum age of eligible population |  |
| Minimum and maximum age of participants | Minimum age must be ≥15 years to meet our eligibility criteria |
| Site of test | Rectal, genital and rectal, all sites |
| Site of infection | Rectal site only, all sites, genital and rectal. |
| Study Setting data items: | |
| Setting | Primary care, sexual health clinics, gynaecologist, school |
| Who obtained sample? | Self-obtained, clinician obtained |
| Rectal and urogenital specimen collection type | Rectal swab, Endocervical swab, vulvovaginal swab, urine. |
| Outcome of interest data items: | |
| Number of eligible female participants |  |
| Number tested for rectal chlamydia |  |
| Number tested with valid results | Valid results were those that gave a definitive positive or negative result. Equivocal results were not considered valid. |
| Number testing positive/negative for rectal chlamydia | Used to complete a 2x2 table |
| Number tested for urogenital chlamydia (if applicable) |  |
| Number tested with valid results | Valid results were those that gave a definitive positive or negative result. Equivocal results were not considered valid. |
| Number testing positive/negative for urogenital chlamydia (if applicable) | Used to complete a 2x2 table |
| Was data about history of anal-intercourse collected? | Yes, No |
| Number of women reporting and not reporting a history of anal-intercourse (if applicable) | Used to complete a 2x2 table. Although extracted where possible, the definition for history of anal-intercourse varied across studies or was not specified |
| Funding information: | |
| Funding information and conflicts of interest | Free-text |

**Supplementary data 3: Results of additional data items extracted from included full text papers.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Study | Site of test | Site of infection | Who obtained sample? | Rectal specimen type/collection method | Urogenital specimen type/collection method if applicable |
| Bachmann et al., 2010 | All sites | All sites | Not specified | Rectal swab/5cm into rectum and rotated | Not specified |
| Bazan et al., 2015 | Genital and rectal | Genital and rectal both infected | Clinician obtained | Rectal swab | Urine |
| Cosentino et al., 2012 | Rectal | Rectal site only infected | Clinician obtained and self-obtained | Swabs | n/a |
| Ding and Challenor, 2013 | Rectal | Genital and rectal both infected | Clinician obtained and self- collected | Roche Cobas 4800 CT/NG PCR Swab | Endocervical swab, vulvovaginal swab |
| Garner et al., | All sites | All sites | Not specified | Gen-probe Aptima COMBO 2 Assay Swab | Urine or vaginal or cervical swab |
| Gratrix et al., 2015 | Genital and rectal | Genital and rectal both infected | Not specified | Gen-probe Aptima COMBO 2 Assay Swab | Endocervical swab, Urine |
| Hunte et al., 2010 | Genital and rectal | Genital and rectal both infected | Not specified | Gen- Probe Aptima combo 2 assay Swab | Endocervical swab, Urine |
| Mayer et al., 2012 | All sites | All sites infected | Clinician obtained | Gen Probe APTIMA vaginal swab specimen collection kit | Not specified |
| Musil et al., 2016 | Genital and rectal | Genital and rectal both infected | Clinician obtained and self-collected | Roche Cobas Amplicor Assay | Urine or vaginal or cervical swab |
| Ostergaard et al., 1997 | All sites | All sites infected | Clinician obtained | Roche Amplicor Swab | Endocervical swab |
| Rodriguez-Hart et al., 2012 | All sites | All sites infected | Clinician obtained | Gen Probe APTIMA combo 2 Swab | Vulvovaginal swab |
| Sethupathi et al., 2010 | Genital and rectal | Genital and rectal both infected | Clinician obtained | Blind technique or protoscopically. Swabs | Not specified |
| van Liere et al., 2014 | Genital and rectal | Genital and rectal both infected | Self-obtained | Swabs - Roche Cobas 4800 | Vulvovaginal swab |
| van Rooijen et al., 2015 | Genital and rectal | Genital and rectal | Clinician obtained | Aptima CT assay Gen probe | Cervical swab |

Supplementary material 4: Results of risk of bias assessment and type of recruitment for the studies included in the systematic review.

*Questions taken from Hoy et al., 2012 appendix 1 found here* [*http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1529-0131*](http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1529-0131)*) . Two reviewers independently undertook the risk of bias assessment. Red boxes represent answers in which the reviewers disagreed.*

*H= High risk; L = Low risk; L/H= Low/High risk*

*A = active recruitment (patients knew they were being asked to participate and were actively recruited for the study);*

*P=Passive recruitment (patients were swabbed solely for clinical reasons, the clinical record was reviewed for the study.*

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | Study | | | | | | | | | | |
| Question number from risk bias tool (Hoy et al., 2012, appendix 1) | **Reviewer** | **Bachmann et al., 2010** | **Bazan et al., 2015** | **Cosentino et al., 2012** | **Ding & Challenor, 2014** | **Gratrix et al., 2015** | **Hunte et al., 2010** | **Mayer et al., 2012** | **Ostergaard et al., 1997** | **Rodriguez-Hart et al., 2012** | **Sethupathi et al., 2010** | **van Liere et al., 2014** |
| 1 | **1** | H | H | H | H | H | H | H | H | H | H | H |
| **2** | H | H | H | H | H | H | H | H | H | H | H |
| 2 | **1** | H | H | H | H | H | H | H | H | H | H | H |
| **2** | H | H | H | H | H | H | H | H | H | H | H |
| 3 | **1** | H | H | H | H | H | H | H | H | H | H | H |
| **2** | H | H | H | H | H | H | H | H | H | H | H |
| 4 | **1** | H | H | H | H | H | H | L | H | L | H | H |
| **2** | H | H | H | H | H | H | H | H | H | H | L |
| 5 | **1** | L | L | L | L | L | L | L | L | L | L | L |
| **2** | L | L | L | L | L | L | L | L | L | L | L |
| 6 | **1** | L | L | L | L | L | L/H | L/H | L | L | L | L |
| **2** | L | L | L | L | L | L | L | L | L | L | L |
| 7 | **1** | L | L | L | L | L | L | L/H | H | L | L | L |
| **2** | L | L | L | L | L | L | L | L | L | L | L |
| 8 | **1** | L | L | L | L | L | L | H | L | L | L | L |
| **2** | L | L | L | L | L | L | L | L | L | L | L |
| 9 | **1** | L | L | L | L | L | L | L | L | L | L | L |
| **2** | L | L | L | L | L | L | L/H | H | L | L | L |
| 10 | **1** | L | L | L | L | L | L | L | L | L | L | L |
| **2** | L | L | L | L | L | L | L | L | L | L | L |
| Summary | **1** | **H** | **H** | **H** | **H** | **H** | **H** | **H** | **H** | **H** | **H** | **H** |
| **2** | **H** | **H** | **H** | **H** | **H** | **H** | **H** | **H** | **H** | **H** | **H** |
|  | |  |  |  |  |  |  |  |  |  |  |  |
| Type of recruitment | | **A** | **P** | **A** | **A** | **A** | **A** | **A** | **A** | **A** | **P** | **A** |

Supplementary material 5a:

Individual and summary estimates of the proportion of women with a rectal chlamydia infection among women who tested positive for urogenital chlamydia (N=10). *CI = Confidence intervals.*

ADD FIGURE HERE

**Supplementary material 5b:**

Individual and summary estimates of the proportion of women with a rectal chlamydia infection among women who tested negative for urogenital chlamydia (N=9)

*Eight studies were used; one could not be used because the data tables contained zeros as all women had concurrent infections or were positive for urogenital CT only. CI = Confidence intervals.*

ADD FIGURE HERE

Supplementary material 6:

*Individual and summary estimates for the risk ratio of rectal chlamydia infection and a history of anal intercourse (N=11)*

*The dotted line represents the summary estimated risk ratio. The diamond represents the summary risk ratio and confidence intervals for all 5 studies. Five studies were included in this meta-analysis, five studies were automatically excluded due to the data tables containing zeros, as these studies included only women with a history of anal intercourse 8,26-29 and one was excluded due to missing data on the number of women who had a negative rectal test and no history of anal intercourse17 RR=risk ratio; CI = Confidence intervals.*

ADD FIGURE HERE