The need for a chlamydial culture service*

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SUMMARY In a prospective study of unselected, female patients attending a sexually transmitted disease clinic one in eight patients would have been erroneously declared free of infection in the absence of a chlamydial culture service. Chlamydia trachomatis is now accepted as a causative organism of non-specific urethritis and post-gonococcal urethritis in men and non-specific genital infection in women. Thus, facilities for the isolation of C. trachomatis should be an essential aid in the management of women attending STD clinics. Male patients would also benefit if such facilities were readily available.

Introduction

Chlamydia trachomatis has become recognised increasingly as a common human pathogen in many disciplines of medicine. The identification of women harbouring C. trachomatis is desirable for many reasons. It is now accepted that these women are a potential source of infection to their male partner(s) and that they may develop salpingitis (Märldh et al., 1977).

In pregnancy there may be premature labour and, after delivery, an increased risk of post-partum pelvic infection in the mother and inclusion conjunctivitis in the child (Rees et al., 1977). Cases of neonatal pneumonitis have also been reported (Beem and Saxon, 1977).

It is regrettable therefore that those few clinics with laboratory facilities for the isolation of C. trachomatis tend to be looked on as research centres and are not generally regarded as providing an essential aid to the diagnosis and management of the most common sexually transmitted disease (Department of Health and Social Security, 1976).

In March 1976 a prospective study of female patients attending this department was carried out. Patients were unselected apart from the exclusion of those who had received antibiotic treatment in the previous two months.

The main aim of the study was to collect data from patients harbouring C. trachomatis for comparison with those patients with other sexually transmitted diseases and those who were free from infection.

Over an 18-month period, information was obtained by means of confidential questionnaires, from which—together with clinical and laboratory findings—we hoped to gain a greater understanding of the epidemiology of chlamydial genital infection.

The data presented in this paper are restricted to symptoms and reasons for attendance in unselected female patients.

Patients and methods

All patients in the study were screened for other sexually transmitted diseases using standard methods (Barlow et al., 1976). Samples were taken from the vagina for microscopy and culture of Trichomonas vaginalis and Candida albicans and from the urethra, cervix, and rectum (where indicated) for microscopy and culture of Neisseria gonorrhoeae. Samples for herpes simplex isolation were taken where clinically indicated. A specimen for cervical cytology and blood for antitreponemal antibodies were also collected.

Specimens for the isolation of C. trachomatis were taken from the endocervix (including junctional material) using sterile cottonwool swabs. The specimens were inoculated on to McCoy cell monolayers either immediately or after storage at 4°C overnight. If a longer period was to elapse before inoculation, the samples were kept at -70°C. After the slides had been incubated for 48 hours, C. trachomatis was diagnosed by the finding of characteristic brown-staining inclusions after
flooding of the fixed cell-layers with iodine. Full
details of this technique are described elsewhere
(Reeve et al., 1975).

Results and discussion

CHLAMYDIAL SERVICE FOR WOMEN
During the study over 2000 samples from the female
decorvix were processed, and the isolation rate for
chlamydiae varied month by month between 20 and
25% (average 23·6%) after exclusion of contaminated specimens.

The symptoms on attendance in three groups of
patients are shown in Table 1. Those patients with
chlamydia infection alone and those with no sexually
transmitted disease (NVD) are compared with patients with gonorrhoea alone (Barlow and Phillips,
1978). There was no significant difference between
the presenting symptoms in any of these groups.

The overall isolation rate of C. Trachomatis in
unselected women in our study was similar to that
obtained in other studies (Hilton et al., 1974; Oriel et
al., 1974; Nayyar et al., 1976; Woolfit and Watt,
1977). Presenting symptoms gave no clue to the
presence or absence of chlamydiae, which confirms previous reports (Oriel et al., 1974; Burns et al.,
1975; Oriel et al., 1978).

One hundred and seventy-eight (31·4%) chlamydiae-positive patients were contacts of patients with non-specific urethritis (NSU) (Table 2).
At many centres these contacts would have received
treatment epidemiologically in the absence of a
chlamydia service laboratory.

<table>
<thead>
<tr>
<th>Table 1 Symptoms on attendance in female patients</th>
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<tr>
<td>Symptoms</td>
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<tr>
<td></td>
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<tr>
<td>Vaginal discharge</td>
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<tr>
<td>Dysuria</td>
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<td>Pruritus</td>
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<td>Abdominal pain</td>
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<tr>
<td>Frequency</td>
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<tr>
<td>Other</td>
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<tr>
<td>No symptoms</td>
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<table>
<thead>
<tr>
<th>Table 2 Reasons for attendance in 567 chlamydiae-positive female patients</th>
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<tr>
<td>Reason</td>
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<tr>
<td>Contact of NSU</td>
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<tr>
<td>Contact of gonorrhoea</td>
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<tr>
<td>Own accord</td>
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<tr>
<td>General practitioner referral</td>
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<tr>
<td>Boyfriend (with possible STD)</td>
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<tr>
<td>Other</td>
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</tbody>
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J. R. Willcox, P. G. Fisk, J. Barrow, and D. Barlow

Furthermore, 122 (21·5%) patients were contacts
of gonorrhoea. Possibly most of these cases would
not have received treatment for their chlamydia
infection without a chlamydia service. It is not
standard practice for many clinics to issue contact
slips to men developing post-gonococcal urethritis
(PGU) and thus the treatment of the female contact
for post-gonococcal non-specific genital infection
(NSGI) is often overlooked—even if she has attended
for follow up. Additionally, should a male patient
default before PGU can be diagnosed, there is no
way of excluding, or treating, NSGI in his partner
even on epidemiological grounds.

Over 28% (159) of patients with chlamydia
infection came to the clinic of their own accord and
58 were referred by their general practitioners, family
planning clinics, or other hospital departments. A
further 8% attended because they suspected that
their partner had a sexually transmitted disease but
were unable to provide any definite information.

Thus, 68·6% of chlamydiae-positive female
patients were not contacts of NSU. In 1976, 5747 new
female patients attended this department and if a
conservative chlamydia isolation rate of 20% is
taken it would be expected that 1149 positive
isolations would be obtained. Only 361 patients (the
contacts of NSU) would have been treated
epidemiologically, leaving 788 (68·8%) women who
were chlamydiae-positive but would not have been
treated. If these results are extrapolated for the whole
of England, it can be estimated that in 1976 there
were 18 300 women seen in clinics with undiagnosed,
and, therefore, untreated, chlamydia infection.
Presumably most of these patients were told that they
were free from infection.

CHLAMYDIAL SERVICE FOR MEN
As chlamydiae-positive and chlamydiae-negative
urethritis are treated identically in most centres, and
since there have been few reports of C. Trachomatis
isolation from the male urethra in the absence of
urethritis (Holmes et al., 1975; Alani et al., 1977), at
first sight there would seem to be no great advantage
in taking routine chlamydial cultures from all male
patients.

In two areas, however, chlamydia isolation would
be valuable. The first is in cases where double
infection with gonococci and chlamydiae have
occurred. Traditionally the after-effects of
gonococcal urethritis must be eradicated before PGU
can be diagnosed. This takes up to two weeks in most
centres. If a chlamydia infection could be diagnosed
within two or three days of the patient's first
attendance treatment could be started earlier, thus
reducing the time during which the patient would be
under observation—a mutual benefit to patient and
The need for a chlamydial culture service

Conclusion

A large reservoir of untreated chlamydial infection seems to exist in female patients attending similar departments in the UK. Routine screening tests or clinical findings are unlikely to be of help in such cases (Oriel et al., 1978).

Included among these patients are contacts of gonorrhoea (21·5% in our series), and it has been suggested (Richmond and Oriel, 1978) that all women with gonorrhoea should be given anti-chlamydial treatment since chlamydial isolation rates among such women have been shown to be as high as 30-60% (Hilton et al., 1974; Oriel et al., 1974; Burns et al., 1975; Woolfit and Watt, 1977).

Had we adopted such a policy in this department we would have treated 52·9% of chlamydiae-positive women (including those who were contacts of NSU) but also many gonorrhoea-positive but chlamydiae-negative women.

Encouraging reports of specific tests to detect anti-chlamydial antibody in both serum and local secretions have been published recently (Treharne et al., 1977, 1978) but it remains to be seen how specifically such tests reflect current as opposed to past chlamydial infection.

We believe, however, that a chlamydial diagnostic service—either by direct culture of the organism or by other means—should now be regarded as a necessity rather than a luxury.

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References


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