DEBATE—continued

**Chlamydia trachomatis** in subfertile women undergoing uterine instrumentation

How can we help in the avoidance of iatrogenic pelvic inflammatory disease?

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Guidelines drawn up for patients undergoing termination of pregnancy state that there should be a protocol for either screening or treating for *Chlamydia trachomatis*. So far guidelines for other techniques that require instrumentation of the uterus (e.g. hysterosalpingography) remain unclear and controversial. By looking for other less invasive techniques we will be able to avoid these problems in a proportion of cases. Screening or treatment should be performed in those cases requiring uterine instrumentation.

**Key words:** Chlamydia trachomatis/pelvic inflammatory disease/screening/subfertile women/uterine instrumentation

Introduction

Investigation of a subfertile couple normally involves the woman undergoing an assessment of Fallopian tube patency; the two most commonly used methods of assessment are still hysterosalpingography (HSG) and laparoscopy with hydrotubation (Dabekausen et al., 1994). Although laparoscopy is considered the ‘gold standard’ it is an invasive procedure and carries with it specific complications including major vascular injuries (Chapron et al., 1997) and gastrointestinal injuries (Chapron et al., 1995) that occur even during diagnostic laparoscopy. In contrast, HSG, which is cheaper and less invasive, is used routinely as an initial investigation in many fertility centres, although it is uncomfortable and has a lower sensitivity than laparoscopy (Swart et al., 1995). Both techniques may introduce infection into the upper genital tract or reactivate old infection in the same way as other procedures that involve instrumentation of the uterus, such as termination of pregnancy (TOP) and insertion of an intrauterine contraceptive device (IUD). Ironically, methods used to assess tubal patency may thus lead to the development of tubal damage, the condition an HSG seeks to assess. In 1998, the Royal College of Obstetricians and Gynaecologists (RCOG) recommended that ‘consideration should be given either to screening women for *C. trachomatis*, using an appropriately sensitive technique, or using appropriate antibiotic prophylaxis’ (Royal College of Obstetricians and Gynaecologists, 1998). However, recent RCOG guidelines are more ambiguous stating that ‘screening for chlamydial antigen prior to uterine instrumentation should be considered if patients are at risk. In general, this will mean testing women ≤25 years for the presence of asymptomatic chlamydial infection’ (Royal College of Obstetricians and Gynaecologists, 2000b).

Non-invasive techniques

The use of risk factors has been suggested as a way of identifying women at higher risk of genital chlamydial infection. However, very few epidemiological studies have ever been undertaken on women attending for subfertility services, and those that have been carried out have been on a small scale. Consequently there is little evidence to guide the formulation of risk factor criteria. Data from studies of genital tract chlamydial infections in other clinical settings, such as Genito-Urinary Medicine (GUM) clinics, cannot be extrapolated to assess the risk of infection in attendees at subfertility clinics as these clinic populations are not related.

The risk of introducing infection to the upper genital tract may be reduced if a greater emphasis was placed on non-invasive methods, such as serological testing. *C. trachomatis* antibody testing has been shown to be more accurate than HSG in predicting the presence of tubal disease (Dabekausen et al., 1994). The micro-immunofluorescence (MIF) testing has been used to detect antibodies to *C. trachomatis* and this has been evaluated in the investigation of tubal factor fertility (Jones et al., 1982) and ectopic pregnancy (Chow et al., 1990). Women with low or negative titres have a <5% chance of having tubal disease (Thomas et al., 2000). However this policy of selective laparoscopy is not universally accepted. Even in the presence of negative titres and a negative history there will remain a small proportion of women with tubal blockage (Johnson et al., 2000).

Endocervical screening

The dominant cause of pelvic inflammatory disease (PID) is genital *C. trachomatis* infection, the most common curable sexually transmitted infection (STI) seen in the UK (PHLS, DHSS & PS and the Scottish ISD-(D)-5 Collaborative Group, 2001).
However PID can be caused by other organisms including genital mycoplasmas, endogenous vaginal flora (anaerobic and aerobic bacteria), aerobic streptococci, *Mycobacterium tuberculosis* and STIs such as *Neisseria gonorrhoeae* (Sweet, 1996). It is difficult to establish the contribution of each of these aetiological agents to PID epidemiology as their prevalence reflects current epidemics, and control and intervention strategies. Infection with facultative and anaerobic bacteria is associated with tubo-ovarian abscess, a late manifestation of PID, and is not associated with either *N. gonorrhoeae* or *C. trachomatis*. Screening for genital chlamydial infection, whether by lower genital tract infection or antibody, may identify women with chlamydial infection but will not detect any of the other aetiological agents that are known to cause PID. The recommendation of the Chief Medical Officer’s (CMO’s) expert advisory group on *C. trachomatis*, that there should be opportunistic screening of any women undergoing instrumentation of the cervix, does not preclude other microbiological investigations from being undertaken (Department of Health, 1998). Such investigations are needed to effectively manage patients who may be at risk of developing iatrogenic PID.

Endocervical *Chlamydia* infection was detected using using ligase chain reaction (LCR) (Macmillan and Templeton, 1999) in 1.9% of patients attending for subfertility investigations. Although this does not account for reactivated infection (Land et al., 2002) this illustrates that a proportion of women attending subfertility services are likely to have endocervical genital chlamydial infection. However, since the mean age of women attending the fertility clinic and IVF clinics was 30 and 33 years old respectively, few attendees would come within the scope of the RCOG guidelines. Consequently it is likely that those infected with *C. trachomatis* would not have been diagnosed if the RCOG guidelines had been followed.

**The problem with prophylaxis**

There are a number of inconsistencies surrounding the recommendations for antibiotic prophylaxis. Firstly the RCOG recommends that whereas broad-spectrum antibiotic prophylaxis is used after TOP (Royal College of Obstetricians and Gynaecologists, 2000a), only treatment for chlamydial infection should be considered for women undergoing HSG. The use of broad-spectrum antibiotic prophylaxis in the management of all women undergoing uterine instrumentation would ensure that iatrogenic PID does not develop. This however would require a large number of people to be offered antibiotic prophylaxis. Secondly, it is unclear whether prophylaxis should be extended to the other populations. For example, is it necessary to treat or screen all women undergoing an embryo transfer or endometrial biopsy? The recent Cochrane review on the role of prophylaxis for IUD insertion found no increased risk of developing PID, except where the rate of sexually transmitted diseases was high (Grimes and Schulz, 2001).

**Conclusions**

Most clinicians are aware that PID can have lifelong consequences: increased risk of ectopic pregnancy, tubal infertility and chronic pelvic pain, which is associated with an increased risk of hysterectomy (Weström, 1994). Certain conditions will lead to more aggressive disease. PID in women with symptomatic HIV disease and/or severe immune suppression has a higher morbidity than in HIV negative patients (Korn and Landers, 1999). The consequences of iatrogenic PID to women’s health are far reaching and probably underestimated. Thus even though women undergoing investigations for subfertility are at low risk of genital tract chlamydial infection, uterine instrumentation could leave them exposed to the lifelong consequences of PID.

We must examine whether it is necessary to submit women to procedures known to be associated with an increased risk of PID and evaluate alternative, non-invasive methods of assessing Fallopian tube patency. In addition, for those who do require uterine instrumentation, there is a strong case for prophylactic antibiotic treatment to be used, but clearer, more comprehensive guidelines are required.

**References**


