

Audit of the management of pelvic inflammatory disease in general practice

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SUMMARY. There has been a change in the causative organisms of pelvic inflammatory disease over recent years — *Chlamydia trachomatis* is now the commonest infecting organism. Pelvic inflammatory disease is often managed in general practice and it is important that each episode is treated adequately in order to prevent recurrent infection, with its short term morbidity and long term risk of infertility and ectopic pregnancy.

In an attempt to document the current management of pelvic inflammatory disease in general practice, a questionnaire was sent to all 143 general practitioners in the Torbay area health authority. The response rate was 78.3%. Investigation methods and treatment regimens varied, with almost half (46.4%) of the respondents taking endocervical specimens but only 25.0% providing antibiotic therapy against *C. trachomatis*. Only 39.3% of the doctors considered investigation or referral of the male partner.

It is concluded that general practitioners are willing to participate in clinical audits of this kind and that the management of pelvic inflammatory disease in general practice is often incomplete.

Introduction

PELVIC inflammatory disease is a polymicrobial infection of the female pelvic organs, which is often managed in general practice. The disease develops in an estimated 1% of young women (15–25 years) annually and causes more morbidity among that age group than all other serious infections combined.¹ The incidence of pelvic inflammatory disease is increasing. The factors underlying this rise are sexually transmitted diseases, the use of intrauterine contraceptive devices, and infection following obstetric and gynaecological procedures. The long term sequelae of acute pelvic inflammatory disease include recurrent infection and an increased incidence of ectopic pregnancy and infertility.² It is therefore important that the acute episode is treated adequately in order to prevent these complications.

Chlamydia trachomatis is now the most common infecting organism; it is implicated in up to two thirds of cases of pelvic inflammatory disease.^{3,4} This organism seems to be replacing *Neisseria gonorrhoeae* as the predominant sexually transmitted pathogen, the gonococcus being implicated in 10–50% of cases.^{3,4} Other organisms implicated include *Mycoplasma hominis*, enterobacteria and anaerobic bacteria. This wide spectrum of bacterial invaders has important implications for antibiotic therapy.

The purpose of this study was to document how general practitioners manage women suspected of having pelvic inflammatory disease, and particularly to investigate whether they are aware of the increasing importance of *C. trachomatis* and its treatment.

Method

In April 1987 a questionnaire was sent to the 143 general practitioners in the Torbay area health authority which has a population of 236 700 with 44 600 (18.8%) women aged 15–44 years. The questionnaire asked how many cases of pelvic inflammatory disease the doctors saw annually, whether they took swabs before treatment, which antibiotics they used in the initial treatment from a list of eight, how many days treatment they prescribed, and whether they investigated the male partner or referred to a genitourinary clinic. The questionnaire was sent three weeks prior to the return date, and was accompanied by a letter of introduction and explanation, which also invited comments and criticisms. Sample questionnaires were also sent to three consultant gynaecologists and to the consultant physician in genitourinary medicine but their responses are not reported here.

Results

Of the 143 questionnaires 112 were returned, a response rate of 78.3%. The number of cases seen annually by the respondents are shown in Table 1 together with the specimens taken. A total of 52 doctors (46.4%) took endocervical smears but only two specifically mentioned the use of *C. trachomatis* specimen kits. The antibiotic therapy used by the general practitioners and the length of treatment prescribed are shown in Table 2. Ninety four doctors (83.9%) provided combination antibiotic therapy, and metronidazole was included in the therapeutic regimens of 93 (83.0%). Twenty eight general practitioners (25.0%) provided anti-chlamydial therapy, but only 20 (17.9%) did so for longer than 10 days. Four doctors provided combination therapy against *C. trachomatis* and *N. gonorrhoeae*. Six different antibiotics were used as single therapeutic agents. Only 44 doctors (39.3%) considered investigation or referral of the male partner.

Table 1. Number of cases of pelvic inflammatory disease seen annually and the specimens taken by the 112 doctors.

	Number (%) of GPs
<i>Number of cases seen annually</i>	
1–3	34 (30.4)
4–6	48 (42.9)
7–9	9 (8.0)
>9	21 (18.7)
<i>Specimens taken</i>	
High vaginal swab	43 (38.4)
Endocervical swab	9 (8.0)
High vaginal and endocervical swabs	19 (17.0)
High vaginal and urethral swabs	5 (4.5)
Endocervical and urethral swabs	6 (5.4)
High vaginal, endocervical and urethral swabs	12 (10.7)
High vaginal, endocervical, urethral and rectal swabs	2 (1.8)
High vaginal swab (and endocervical and urethral swabs if gonococcus suspected)	4 (3.6)
Total taking endocervical swabs	52 (46.4)
Total taking swabs	100 (89.3)

Table 2. Antibiotic therapy used by the 112 doctors to treat pelvic inflammatory disease and the length of treatment prescribed.

Treatment	Number of GPs		
	Total	Treatment for <10 days	Treatment for ≥10 days
Metronidazole and ampicillin	41	22	19
Metronidazole and erythromycin ^a	13	4	9
Metronidazole and a cephalosporin	11	5	6
Metronidazole and tetracycline ^a	9	1	8
Metronidazole and cotrimoxazole	8	3	5
Metronidazole, ampicillin and cotrimoxazole	3	2	1
Metronidazole, tetracycline and a cephalosporin ^{a,b}	2	2	—
Metronidazole, tetracycline and ampicillin ^{a,b}	2	—	2
Metronidazole, tetracycline and erythromycin ^a	1	1	—
Other combinations	4	—	4
Tetracycline ^a	1	—	1
Other single drug therapy	16	7	9
No treatment	1	—	—

^a Therapy against *C. trachomatis*. ^b Therapy against *C. trachomatis* and *N. gonorrhoeae*.

Discussion

This study attempted to document the current management of pelvic inflammatory disease in general practice. The response rate to the questionnaire (78.3%) suggests that general practitioners are willing to participate in clinical audits of this kind, and this encouraging feature should be exploited further in documenting primary health care.

The study has shown that a wide variation exists in the number of cases of pelvic inflammatory disease seen annually by general practitioners. However, to obtain valid figures, a prospective study using agreed diagnostic criteria would have to be undertaken.

The data suggests that although most general practitioners (83.9%) are aware of the need for combination antibiotic therapy, and also of the importance of treating anaerobic bacteria (83.0% prescribe metronidazole), few are aware that *C. trachomatis* is the commonest infecting organism. *C. trachomatis* is sensitive to erythromycin and tetracycline and it would seem prudent for general practitioners to include one of these antibiotics with metronidazole, in the treatment of all patients with acute pelvic inflammatory disease. Twenty eight general practitioners (25.0%) prescribe erythromycin or tetracycline but only 20 (17.9%) prescribe treatment for at least 10 days, which is commonly recommended.^{5,6} Infection with *C. trachomatis* often produces minimal clinical symptoms and may therefore go unnoticed and untreated.⁷

Endocervical specimens are recommended for the isolation of *N. gonorrhoeae* and *C. trachomatis* but *C. trachomatis* will not be identified from standard charcoal endocervical swabs, unless suitable transport media or facilities for batched immunofluorescence microscopy are employed. Of the 52 (46.4%) doctors in this study taking endocervical swabs, only two specifically mentioned the use of *C. trachomatis* isolation kits. Recently the use of monoclonal antibody immunofluorescence kits such as Microtrak (Syva), has been demonstrated in general practice.⁸ However, cost may prohibit their use, and it has been suggested that their application should be limited to young women with multiple sexual partners.⁵

Suspected gonococcal infection, which seems to be of decreasing incidence may be treated by an immediate dose of ciprofloxacin (250 mg) taken orally or ampicillin (3 g) with probenecid (1 g) taken orally. An alternative treatment is amoxicillin (250 mg) plus clavulanic acid (125 mg), which has activity against anaerobes and *N. gonorrhoeae*. Whether all patients managed in general practice require specific anti-gonococcal therapy seems unclear. In this study four doctors provided combination antibiotic therapy against *C. trachomatis* and *N. gonorrhoeae*. In those patients with mild symptoms it may be reasonable to await culture results from standard endocervical swabs, and then to modify the treatment accordingly.

Pregnant women and nursing mothers should be treated with caution, and should not receive ciprofloxacin or tetracycline.

Of the general practitioners in this study only 39.3% considered referral or investigation of the male partner. Recent evidence suggests that a high proportion of the male partners of women with pelvic inflammatory disease seen in hospital have definitive gonococcal and/or chlamydial infection.^{4,9} These women and others are thereby exposed to a high risk of reinfection. Figures are not available for male partners of women with pelvic inflammatory disease managed in general practice. However, referral of the male partner(s) to a department of genitourinary medicine, or investigation of these patients in the surgery is recommended.

Two doctors in this study remarked that they routinely refer for diagnosis all patients with a first attack of pelvic inflammatory disease. While urgent referral of patients with severe pelvic inflammatory disease is necessary, such a referral policy for all patients with pelvic inflammatory disease, as advocated in Sweden,³ would overload gynaecology departments in this country. Perhaps it would be more practical to consider referring those patients with recurrent disease for diagnostic laparoscopy. This would overcome the inaccuracy of clinical assessment, and with the collection of microbiological material would more accurately direct therapy. The criteria for referral of patients suspected of having pelvic inflammatory disease requires clarification, and a further study should attempt to document the attitudes of general practitioners and gynaecologists to this problem.

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