# Female pelvic pain

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## Abstract

There are many different causes of female pelvic pain, some of which can be life-threatening while others can have long-term implications for fertility. It can be difficult to identify the underlying cause of pelvic pain as many conditions have similar symptoms and signs. All sexually active women presenting with pelvic pain should have a pregnancy test to rule out an ectopic pregnancy. Pelvic inflammatory disease (PID) is infection and inflammation of the upper reproductive tract following breach of the physical mucous barrier at the cervix. The clinical spectrum ranges from asymptomatic infection through to severe disease requiring hospitalization. PID is a common cause of female pelvic pain and can result in significant adverse sequelae including ectopic pregnancy and infertility. Because of the non-specific nature of PID, diagnosis can be challenging. In sexually active women where no alternative cause of pelvic pain has been identified, PID should be considered and empirical antibiotic treatment offered. Antimicrobial therapy should cover a broad spectrum of pathogens and reflect local epidemiology of specific infective organisms. Partners should be offered screening tests and empirical treatment, and avoid sexual intercourse until they and the index patient have completed treatment.

**Keywords** Chlamydia; chronic pelvic pain; gonorrhoea; infertility; MRCP; *Mycoplasma*; pelvic inflammatory disease

## Key points

- The differential diagnosis of female pelvic pain is broad, with many of the causes having similar symptoms. A swift diagnosis of potentially life-threatening causes is essential
- Pelvic inflammatory disease is a serious complication of sexually transmitted infections that can have significant sequelae such as ectopic pregnancy, infertility and chronic pelvic pain
- Clinicians must have a high index of suspicion for making a diagnosis of pelvic inflammatory disease as clinical symptoms and signs lack sensitivity and specificity

## Introduction

The differential diagnosis of female pelvic pain is broad, with many conditions having similar symptoms and signs, which can create a diagnostic challenge (Table 1). Some of the causes can have serious implications if unrecognized, while others remain difficult to confirm even after extensive investigations.

When assessing women presenting with pelvic pain, it is essential to exclude conditions that can be life-threatening before considering other causes. A pregnancy test and assessment for haemodynamic instability secondary to sepsis or bleeding are essential steps in management. Most patients have a more chronic presentation, and a detailed history and examination will help to identify underlying cause.

This article focuses on pelvic inflammatory disease (PID), a common and significant cause of female pelvic pain.

## Pelvic inflammatory disease

### Definition

PID is infection and inflammation of the upper reproductive tract following breach of the physical mucous barrier at the cervix. The clinical spectrum ranges from asymptomatic infection through to severe disease requiring hospitalization. It can involve the endometrium, fallopian tubes, ovaries and pelvic peritoneum, and can result in significant adverse sequelae including ectopic pregnancy and infertility.

### Epidemiology

The incidence of PID is difficult to measure because of the asymptomatic and non-specific nature of many cases. To further complicate matters, symptomatic patients present to a variety of settings, including primary care, sexual health services, gynaecology and accident and emergency departments. This makes precise case-finding challenging and almost certainly leads to widespread under-reporting. In 15–44-year-old women attending general practice between 2000 and 2011, rates of definite or probable PID in England and Wales fell by 9% per year, from 400 to 180 per 100,000.[1] The reduction was seen in all age groups but was most marked in women aged 15–24 years (Figure 1).

### Pathophysiology

PID is a polymicrobial infection and the most significant complication of sexually transmitted infections in women. Less than 30% can be attributed to chlamydia and gonorrhoea, with many cases having an unidentified microbiological aetiology.[2,3] New molecular detection methods have identified potential alternative pathogens including *Mycoplasma genitalium*, *Atopobium*, *Leptotrichia* and other bacterial vaginosis-associated bacteria, although these tests are not available in routine clinical practice.

Microorganisms ascend along the mucosal surfaces of the vagina and cervix to the upper genital tract, breaching the protective mucous barrier at the cervix. Here the direct effect of the organism and the associated host immune response results in inflammation, cell death and tissue destruction. Ciliated cells of

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## Causes of female pelvic pain

| Classification | Cause | Associated symptoms |
|---|---|---|
| Life-threatening | Ectopic pregnancy | Positive pregnancy test; vaginal bleeding; shock |
| | Ruptured ovarian cyst | Sudden, severe, unilateral pain; previous history of ovarian cyst |
| | Appendicitis | Initial intermittent central abdominal pain associated with nausea, progressing to severe, constant pain localized to the right iliac fossa |
| | Bowel obstruction | Intermittent, often severe abdominal pain; bloating; vomiting; reduced bowel opening; reduced flatus |
| Fertility-threatening | Pelvic inflammatory disease ± tubo-ovarian abscess | Bilateral pain; dyspareunia; altered vaginal discharge ± bleeding |
| | Ovarian torsion | Unilateral pain, potentially intermittent; nausea and vomiting |
| Others | Cystitis/urinary tract infection | Suprapubic pain; dysuria; increased urinary frequency |
| | Endometriosis | Dysmenorrhoea, menorrhagia; cyclical pain; deep dyspareunia; dsychezia |
| | Irritable bowel syndrome | Cramping pain; diarrhoea ± constipation; bloating |
| | Mittleschmerz (ovulation pain) | Unilateral; mid-cycle |

**Table 1**

the fallopian tubes are destroyed, with irreversible loss of ciliary motility, tubal damage, and consequently, impaired fertility (Figure 2).

## Diagnosis

Making a diagnosis of PID is challenging because of the wide variation in symptoms and signs, which can overlap with other conditions. Diagnosis is based on clinical assessment, which is subjective and prone to variation depending on knowledge, training and experience. Furthermore, the clinical symptoms and signs of PID also lack sensitivity and specificity, and healthcare professionals must therefore have a high index of suspicion when assessing women with pelvic pain.

The British Association for Sexual Health and HIV guidelines state that 'a diagnosis of PID should be considered, and usually empirical antibiotic treatment offered, in any sexually active woman who has recent onset, lower abdominal pain associated with local tenderness on bimanual vaginal examination, in

**PID diagnosis rate by Public Health England regional centre recorded in 15–44-year-old women in general practice settings from 2000 to 2011**

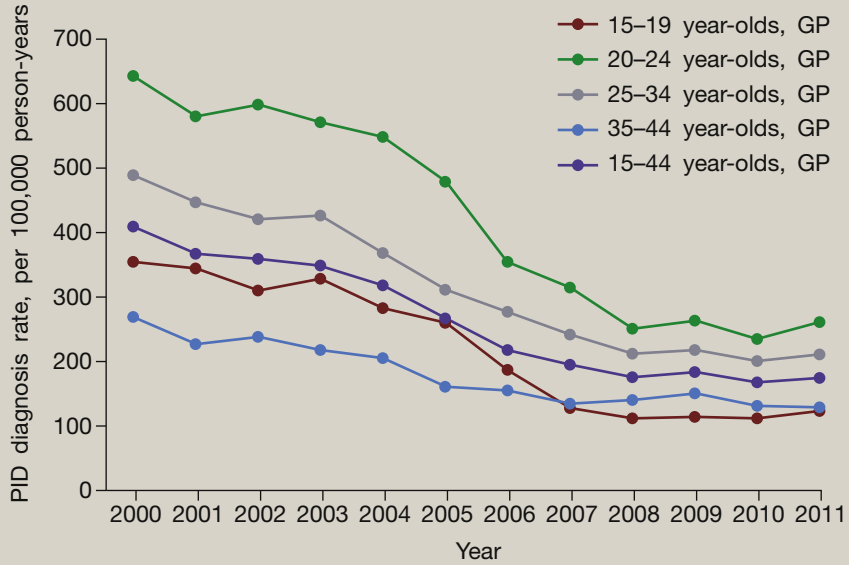


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**Figure 1**




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