CLINICAL GUIDELINE

Pelvic Inflammatory Disease, Diagnosis and Management

A guideline is intended to assist healthcare professionals in the choice of disease-specific treatments.

Clinical judgement should be exercised on the applicability of any guideline, influenced by individual patient characteristics. Clinicians should be mindful of the potential for harmful polypharmacy and increased susceptibility to adverse drug reactions in patients with multiple morbidities or frailty.

If, after discussion with the patient or carer, there are good reasons for not following a guideline, it is good practice to record these and communicate them to others involved in the care of the patient.

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Important Note:

The Intranet version of this document is the only version that is maintained.
Any printed copies should therefore be viewed as 'Uncontrolled' and as such, may not necessarily contain the latest updates and amendments.

Title: The Acute management of Pelvic Inflammatory Disease (PID)

Objectives: To offer recommendations on the diagnosis, treatment and follow up that is required to effectively manage PID in the outpatient and inpatient setting.

Scope:

Audience: Healthcare professionals working in women's health services in GG&C

Body of Guideline:

Pelvic inflammatory disease (PID) results from ascending infection from the endocervix to the upper genital tract, which can cause endometritis, salpingitis, oophoritis, tubo-ovarian abscess and pelvic peritonitis.

PID is a common cause of morbidity, and delay in receiving appropriate treatment greatly increases the risk of sequelae such as infertility, ectopic pregnancy and chronic pelvic pain. PID is associated with sexually transmitted infections (STIs) such as *Chlamydia trachomatis* and *Neisseria gonorrhoea* in approximately 25% of cases. Organisms including *Mycoplasma genitalium* and anaerobes may also be causal.

Women who have had recent instrumentation of the genital tract (e.g. hysteroscopy, endometrial ablation, evacuation of uterus, termination of pregnancy, egg retrieval) are at higher risk of ascending infection caused by organisms such as coliforms. Of note following insertion of IUS/IUD, risk is increased 4-6 weeks, with risk highest in the first 5-7 days.

Clinical features suggestive of PID

- Bilateral lower abdominal pain and tenderness
- Abnormal cervical or vaginal discharge
- Abnormal vaginal bleeding (intermenstrual, postcoital or breakthrough)
- Deep dyspareunia
- Nausea and vomiting
- Fever
- Lower abdominal tenderness with rebound
- Cervical excitation
- Adnexal tenderness (with or without palpable mass)

Severity:

- **Mild PID**: apyrexial, pain controlled by simple analgesia
- **Moderate PID**: pyrexia <38ºC
- **Severe PID**: pyrexia >38ºC, symptoms of acute abdomen (e.g. tenderness with rebound or severe pain), or pelvic mass

Investigations:

- Urine pregnancy test – carry out in all cases of suspected PID to rule out ectopic pregnancy
- Bimanual vaginal examination
- Vulvovaginal NAAT (nucleic acid amplification test) swab in Chlamydia transport medium
- High vaginal swab from lateral vaginal wall in appropriate medium

- FBC, CRP, U+E, LFTs, Lactate – useful in monitoring response to treatment in moderate and severe PID
- Ultrasound scan pelvis – helps to diagnose tubo-ovarian abscess and to rule out some of the differential diagnoses

Differential diagnosis

- Urinary tract infection
- Ectopic pregnancy
- Ovarian cyst accident
- Endometriosis
- Acute appendicitis
- Irritable bowel syndrome
- Diverticulitis
- Functional pain of unknown aetiology

Treatment

Antibiotic treatment should be commenced as soon as a diagnosis of PID is suspected due to the lack of definitive diagnostic criteria and the seriousness of potential complications.

Broad spectrum antibiotic therapy is required to cover Chlamydia, Gonorrhoea and anaerobes. In mild or moderate PID, outpatient treatment is as effective as inpatient treatment.

In severe disease the patient should be admitted for treatment and monitoring.

The usual prescribing restrictions regarding pregnancy and breast feeding apply – consult the appropriate appendix in British National Formulary (BNF).

Summary of antibiotic regimens:

Outpatient	IM Ceftriaxone 1g – stat dose AND Oral Doxycycline 100mg BD – 14 days + Oral Metronidazole 400mg BD – 14 days
Inpatient Continue IVs for 24 hours after clinical improvement. IV oral switch therapy (IVOST) to complete 14 days of treatment	IV Ceftriaxone 2g – OD + Oral Doxycycline 100mg BD – 14 days *(IV preparation is not available in GG&C)* + Oral Metronidazole 400mg BD - 14 days *(IV preparation can be used if septic/no oral intake oral metronidazole > 90% bioavailability)*
Pregnancy This is uncommon, but strongly consider admission for IV treatment given increased maternal and fetal morbidity IVOST to complete a total of 14 days of treatment *Erythromycin/ Clarithromycin risk of serious drug interactions (see BNF) or seek pharmacy advice. May also prolong the QTc interval avoid where possible with other QTc risk factors	IV Ceftriaxone 2g – once daily + IV Erythromycin* 500 mg 6 hourly or IV Clarithromycin* 500mg 12 hourly + Oral Metronidazole 400mg 12 hourly *(IV preparation can be used if septic/no oral intake, oral metronidazole > 90% bioavailability)* THEN IVOST regime Oral Erythromycin* 500mg 6 hourly + Oral Metronidazole 400mg 12 hourly **Total of 14 days therapy** If there are concerns about compliance with erythromycin then Azithromycin is a second line option • 1g oral STAT azithromycin given on the first day of treatment and repeated one week later
***Mycoplasma genitalium* (confirmed with positive swab)**	Oral Moxifloxacin 400mg OD – 14 days Monotherapy if no other positive result See BNF for contraindications

If risk of early pregnancy, where pregnancy test is still negative, the use of the above antibiotic regimens for non-pregnant patients are justified by the benefits of treatment being likely to outweigh any possible risk.

Patients treated as outpatients (particularly with moderate PID) should be reviewed after 48-72 hours to ensure clinical improvement.

For inpatient treatment, intravenous (IV) antibiotics should be continued for 24 hours after clinical improvement and then followed by oral therapy. Total treatment should be 14 days.

- *If patient is pregnant, please discuss with obstetric team regarding admission to antenatal ward for parenteral therapy.*

- *Avoid strong sunlight and/or sunbeds when treated with doxycycline, and discontinue if skin erythema.*

- *Advise against alcohol intake when treated with metronidazole.*

- *Avoid NSAIDs while taking moxifloxacin*

- *Doxycycline is not effective if taken with iron or calcium preparations.*

Indications for hospital admission

- Severe PID: pyrexia >38ºC, symptoms of acute abdomen (e.g. tenderness with rebound or severe pain), or pelvic mass
- Tubo-ovarian abscess (seen in 15-35%)
- PID in pregnancy
- Failure to respond to oral therapy within 48-72 hours
- Intolerance to oral therapy
- Pain not controlled by simple analgesia

On admission; please provide appropriate analgesia and consider thromboprophylaxis.

Surgical treatment

Surgical treatment should be considered in severe PID or where a pelvic abscess has been identified. Laparoscopic division of adhesions and drainage of pelvic abscess may help early resolution of disease. This is a consultant decision.

Image-guided aspiration of pelvic abscesses may also be considered.

Other aspects

PID with intrauterine contraceptive device (IUCD) in situ:

Evidence regarding the need to remove and IUCD when PID is suspected/diagnosed is limited. The insertion of an intrauterine device (IUD) increases the risk of developing PID but only for 4-6 weeks after insertion.

In mild to moderate disease the IUCD can be left in situ with a review arranged for 48-72 hours later. If there is no significant clinical improvement the IUCD should be removed.

The decision to remove an IUCD should be balanced against the risk of pregnancy for women who have had sex in the preceding 7 days. Consider emergency hormonal contraception in this scenario.

Women who are infected with HIV:

These women should be treated with the same antibiotic regime as women who are HIV negative.

Partner notification (PN)

PN in suspected PID is required. Current sexual partner(s) should be contacted and offered screening and treatment for chlamydia and gonorrhoea.

For follow-up and decision on PN and/or treatment, please email Sexual Health Advisers at Sandyford for advice on Sandyfordsexualhealthadvisers@nhs.scot; 0141 211 8634.

To avoid reinfection patients should be advised to avoid oral or genital intercourse until they, and their partner(s), have completed their treatment

In women with positive microbiology for Chlamydia, Gonorrhoea or *Mycoplasma genitalium*, arrange a "test of cure" for 4 weeks after treatment is completed.
Contact Sandyfordsexualhealthadvisers@nhs.scot to arrange this.

Contraception and PID

Discuss ongoing contraceptive needs and advise that barrier methods reduce the risk of reinfection and STIs.

Women taking hormonal contraception presenting with breakthrough bleeding should be screened for Chlamydia.

If an IUCD is desired, this should only be inserted 4 weeks after antibiotic therapy is complete and PID symptoms have resolved. Bridging contraception should be offered. The LNG-IUS or Copper IUD are both acceptable contraceptive options after resolution of PID.

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Appendix 1: How to reconstitute 1 gram ceftriaxone with lidocaine

To reduce the pain experienced by patients receiving intramuscular ceftriaxone the drug is administered with 1% lidocaine (lignocaine).

Take 1G vial of ceftriaxone powder

Draw up 3.5ml lidocaine 1% into a syringe.

Reconstitute the 1G vial of ceftriaxone with 3.5ml of lidocaine 1%.

Draw up the reconstituted ceftriaxone solution from the vial into one syringe. This makes a total of 4.1ml.

Administer the 4.1ml solution of ceftriaxone 1gram by deep intramuscular injection. Well developed muscles eg ventrogluteal, vastus lateralis and dorsogluteal can take up to 5mls volume.

NOTE: Lidocaine must also be prescribed.