GYNAECOLOGY SERVICES NORTH CUMBRIA

MANAGEMENT OF PELVIC INFLAMMATORY DISEASE

DOCUMENT CONTROL

Author/Contact
Lufti Shamsuddin, ST4 Obs & Gynae Trainee / Nalini Munjuluri, Consultant Gynaecology
Tel: 01228 814210
Email: Nalini.Munjuluri@ncuh.nhs.uk

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1. INTRODUCTION

Pelvic inflammatory disease is a generic term indicating inflammation of the pelvic organs including ovaries, fallopian tubes, uterus which may proceed to scar formation and adhesions inside the female pelvis. Although usually associated with sexually transmitted infections including Chlamydia Trachomatis, Neisseria Gonorrhoeae, Mycoplasma Genitalium and anaerobes. Other organisms include Gardnerella vaginalis, Anaerobes (including Prevotella, Atopobium and Leptotrichia).

Symptoms can vary from asymptomatic women to women with severe pain. Long term complications can include sub-fertility, tubo-ovarian abscess, ectopic pregnancy and chronic pelvic pain.

The guidelines are based on the RCOG guidelines for pelvic inflammatory disease (Green Top Guideline Number 32) and the guideline on Management of Pelvic Inflammatory Disease from the British Association for Sexual Health and HIV (BASHH) 2010.

Infection usually ascends from the endocervix causing inflammation of the pelvic organs. Endometritis, salpingitis, parametritis, oophritis, tubo-Ovarian abscess and/or pelvic peritonitis occurs.

2. CLINICAL FEATURES

Symptoms

- Bilateral Lower Abdominal Pain (occasionally radiates to legs)
- Deep Dyspareunia
- Abnormal Vaginal or Cervical Discharge, often purulent
Abnormal vaginal bleeding including post coital, inter-menstrual and menorrhagia

**Signs**

- Lower abdominal tenderness
- Adnexal tenderness on bimanual vaginal examination
- Cervical Motion Tenderness on bimanual examination
- Temperature >38C

**BASHH recommend starting empirical antibiotic treatment in women under 25 with recent onset bilateral lower abdominal pain associated with local tenderness on bimanual examination in whom pregnancy has been excluded.**

Women with HIV may have more severe symptoms but antibiotics may remain the same. Patients respond well to standard antibiotics therapy.

Considerations should be made to remove IUD devices in women presenting with PID, especially in women whose symptoms have not resolved by 72 hours. If removing the IUD, consideration should be given for the need to use emergency hormonal contraception in those who have had unprotected sexual intercourse in the preceding 7 days.

**3. DIAGNOSIS**

PID may be symptomatic or asymptomatic. Even if clinical signs are present, they are non specific or sensitive. The positive predicted value of a clinical diagnosis is 65-90% compared to laparoscopic diagnosis.

Testing for gonorrhea and chlamydia is recommended since a positive test supports the diagnosis of PID. The absence of infection at this site does not exclude the diagnosis of PID.

Elevated CRP or ESR supports diagnosis but again is not specific to PID.

**4. Differential Diagnosis**

- Ectopic Pregnancy
- Acute appendicitis – nausea and vomiting occurs in most patients with appendicitis but only 50% of those with PID
- Endometriosis – correlate the pain and symptoms with the menstrual cycle
- Irritable Bowel Syndrome
- Complications of ovarian cyst, e.g. rupture or torsion.
- Urinary Tract Infection
- Functional Pain
5. MANAGEMENT

Due to the lack of definitive diagnostic criteria a low threshold for empirical treatment is recommended. Delaying treatment increases the risk of ectopic pregnancy, sub-fertility and pain. Broad spectrum antibiotics should be used to cover against Neisseria Gonorrhoea, Chlamydia Trachomatis and a variety of aerobic and anaerobic bacteria commonly isolated in women from the upper vaginal tract.

6. GENERAL ADVICE

- Rest for those with severe disease
- Appropriate analgesia should be used
- IV therapy should be used in patients with more severe clinical disease, e.g. pyrexia, clinical signs of tubo-ovarian abscess, signs of pelvic peritonism.
- Patients should be advised against having unprotected sexual intercourse until they and their partner(s) have completed treatment and follow up.
- Outpatient therapy is as effective as inpatient treatment for patients with clinically mild to moderate PID.

Admission for parenteral therapy, observation, further investigation and/or possible surgical intervention should be considered in the following situations:

- a surgical emergency cannot be excluded
- lack of response to oral therapy
- clinically severe disease
- presence of a tubo-ovarian abscess
- intolerance to oral therapy
- pregnancy

7. FURTHER INVESTIGATION

All sexually active patients should be offered:

- a pregnancy test
- screening for sexually transmitted infections including HIV

8. TREATMENT

The following antibiotic regimens are evidence based:

**Recommended Regimens:**
All the recommended regimens are of similar efficacy.

**Outpatient Regimens:**
i.m. Ceftriaxone* 250mg single dose followed by oral Doxycycline 100mg twice daily plus Metronidazole 400mg twice daily for 14 days
*Clinical trial data support the use of Cefoxitin for the treatment of PID but this agent is not easily available in the UK so Ceftriaxone, which has a similar spectrum of activity is recommended.

Oral Ofloxacin 400 mg twice daily plus oral Metronidazole 400 mg twice daily for 14 days, oral Moxifloxacin 400 mg once daily for 14 days. Metronidazole is included in some regimens to improve coverage for anaerobic bacteria. Anaerobes are of relatively greater importance in patients with severe PID and Metronidazole may be discontinued in those patients with mild or moderate PID who are unable to tolerate it.

Ofloxacin and Moxifloxacin should be avoided in patients who are at high risk of gonococcal PID because of increasing quinolone resistance in the UK (e.g. when the patient’s partner has gonorrhoea, in clinically severe disease, following sexual contact abroad). Quinolones should also be avoided as first line empirical treatment for PID in areas where >5% of PID is caused by quinolone resistant Neisseria gonorrhoeae.

Levofloxacin is the L isomer of ofloxacin and has the advantage of once daily dosing (500mg OD for 14 days). It may provide a more convenient alternative to Ofloxacin but no clinical trials in women with PID have been published for this agent.

Replacing intramuscular Ceftriaxone with an oral cephalosporin (e.g. cefixime) is not recommended because there is no clinical trial evidence to support its use, and tissue levels are likely to be lower which might impact on efficacy. Reports of decreasing susceptibility of Neisseria gonorrhoeae to cephalosporins also supports the use of parenteral based regimens when gonococcal PID is suspected (to maximise tissue levels and overcome low level resistance).

**Alternative Regimens**

Clinical trial evidence for the following regimen is limited but it may be used when the treatments above are not appropriate e.g. allergy, intolerance: IM Ceftriaxone 250 mg immediately, followed by Azithromycin 1 g/week for 2 weeks

Inpatient Regimens

Intravenous therapy should be continued until 24 hours after clinical improvement and then switched to oral.

i.v. Ceftriaxone 2g daily plus oral Doxycycline 100 mg twice daily (i.v. Doxycycline may be used if not tolerated) followed by oral Doxycycline 100 mg twice daily plus oral Metronidazole 400 mg twice daily for a total of 14 days.

i.v. Clindamycin 900 mg 3 times daily plus i.v. Gentamicin (2mg/kg loading dose) followed by 1.5mg/kg 3 times daily [a single daily dose of 7mg/kg may
be substituted]) followed by either oral Clindamycin 450 mg 4 times daily or oral Doxycycline 100 mg twice daily plus oral Metronidazole 400 mg twice daily to complete 14 days.

Gentamicin levels need to be monitored if this regimen is used.

**Alternative Regimens**
Clinical trial evidence for the following regimens is more limited but they may be used when the treatments above are not appropriate e.g. allergy, intolerance:
- i.v. Ofloxacin 400 mg b.d. plus oral Metronidazole (IV if not tolerated) 400 mg twice daily for 14 days.
- i.v. Ciprofloxacin 200 mg b.d. plus oral Doxycycline 100 mg b.d. plus oral Metronidazole (i.v. if not tolerated) 400 mg twice daily for 14 days.

**Allergy**
There is no clear evidence of the superiority of any one of the suggested regimens over the others. Therefore patients known to be allergic to one of the suggested regimens should be treated with an alternative.

9. **PREGNANCY AND BREASTFEEDING**

- PID in pregnancy is associated with an increase in both maternal and fetal morbidity, therefore parenteral therapy is advised although none of the suggested evidence based regimens are of proven safety in this situation.
- There is insufficient data from clinical trials to recommend a specific regimen and empirical therapy with agents effective against gonorrhoea, chlamydia and anaerobic infections should be considered taking into account local antibiotic sensitivity patterns.
- The risk of giving any of the recommended antibiotic regimens in very early pregnancy (prior to a pregnancy test becoming positive) is justified by the need to provide effective therapy and the low risk to the fetus.

10. **SURGICAL MANAGEMENT**
Laparoscopy may help early resolution of the disease by dividing adhesions and draining pelvic abscesses but ultrasound guided aspiration of pelvic fluid collections is less invasive and may be equally effective.

11. **FOLLOW UP**
Mild disease: If not better after 2 weeks referral to Gynae clinic to assess further.

Moderate to severe disease: Review at 72 hours is recommended, particularly for those with a moderate or severe clinical presentation, and should show a substantial improvement in clinical symptoms and signs. Failure to do so suggests the need for further investigation, parenteral therapy and/or surgical intervention.
Further review 2-4 weeks after therapy by GP may be useful to ensure:
- adequate clinical response to treatment
- compliance with oral antibiotics
- screening and treatment of sexual contacts
- awareness of the significance of PID and its sequelae
- repeat pregnancy test, if clinically indicated

Repeat testing for gonorrhoea or chlamydia is appropriate in those in whom persisting symptoms, antibiotic resistance pattern (gonorrhoea only), compliance with antibiotics and/or tracing of sexual contacts indicate the possibility of persisting or recurrent infection.

12. REFERENCES/SOURCE OF EVIDENCE

RCOG Greentop Guideline No32; Management of Acute Pelvic Inflammatory Disease, November 2008

2010 United Kingdom National Guideline for the Management of Pelvic Inflammatory Disease; Ross J, McCartney G. British Association of Sexual Health and HIV.