



PROTOCOL FOR MANAGEMENT OF PELVIC INFECTION

For this protocol, Acute Salpingo-oophoritis is termed 'PID' after the Center for Disease Control (CDC) abbreviation of pelvic inflammatory disease.

- Consider treatment for PID in any sexually active woman presenting with lower abdominal pain who has adnexal tenderness on vaginal examination. This will result in over-treatment but the risks associated with antibiotic treatment are usually small and offset by the potentially serious sequelae that can follow untreated infection.
- Failure to treat PID can result in infertility, ectopic pregnancy or chronic pelvic pain(1)

Contents

Risk Factors 1

Diagnosis 2

Management..... 3

Antibiotic choice 5

Indications for surgery..... 6

Intra-uterine device..... 6

Further reading..... 7

Risk Factors

Known risk factors for pelvic inflammatory disease are(2):

- Sexually transmitted infections (gonorrhoea, chlamydia)
- Young age
- Previous history of PID
- Multiple sexual partners
- Instrumentation of the uterus
- Termination of pregnancy
- Insertion of an intra-uterine device within the past 6 weeks
- Hysterosalpingogram
- In-vitro fertilisation

Diagnosis

- Based on clinical history and examination, with a high index of suspicion. Even when present, clinical symptoms and signs lack sensitivity and specificity.

Clinical features of pelvic inflammatory disease(1)

| Symptoms | Features |
|---|---|
| • Lower abdominal pain | Usually bilateral and of recent onset |
| • Vaginal discharge or bacterial vaginosis | Secondary to cervicitis, endometritis |
| • Vaginal bleeding | Inter-menstrual or post-coital |
| • Dyspareunia | Deep dyspareunia associated with adnexal inflammation |
| • Nausea/vomiting | Associated with severe PID |
| Signs | |
| • Fever | Not common in mild/moderate PID |
| • Adnexal tenderness | Common but non-specific |
| • Adnexal mass | Possible hydrosalpinx, pyosalpinx or tubo-ovarian abscess |

Centre of disease control (CDC) criteria for diagnosis of pelvic inflammatory disease (2015)(3)

| |
|---|
| Any women at risk for STDs, if they are experiencing pelvic or lower abdominal pain, if no cause for the illness other than PID can be identified, and if one or more of the following minimum clinical criteria are present on pelvic examination: |
| • Uterine tenderness |
| • Bilateral adnexal tenderness |
| • Cervical motion tenderness |
| Additional criteria that support the diagnosis of PID |
| • Oral temperature >38.3°C |
| • Abnormal cervical muco-purulent discharge or cervical friability |
| • Presence of abundant white blood cells on saline microscopy of vaginal secretions |
| • Elevated erythrocyte sedimentation rate (ESR) |

Management

1. Exclude pregnancy

2. Exclude other causes of pelvic pain:

- ectopic pregnancy
- urinary tract infection or renal stones
- septic abortion
- endometritis
- acute appendicitis, gastro-enteritis
- endometriosis
- irritable bowel syndrome
- complications of an ovarian cyst i.e. rupture, torsion
- functional pain (pain of unknown physical origin)

3. Give appropriate advice to all women with PID(4). This should include

- how the infection was acquired (sexually)
- how future infections can be prevented through the use of barrier contraception and effective treatment of sexual partners.
- the potential long-term consequences of PID: (infertility, chronic pelvic pain or ectopic pregnancy)
 - Fertility:
 - fertility is usually well preserved in women with first episode PID who receive prompt appropriate anti-microbial therapy
 - the risk of impaired fertility increases significantly with each subsequent episode of PID
 - the risk of impaired fertility is increased in clinically more severe PID
 - chronic pelvic pain of varying severity affects around 30% of women following PID
 - PID increases the relative risk of a subsequent pregnancy being an ectopic, but the absolute risk of ectopic pregnancy remains low

4. Do special investigations:

- Beta HCG if result from pregnancy test is unclear
- HIV test, if status unknown (include appropriate counselling and informed consent)
- Syphilis testing (remember to check results)
- Urine for culture and sensitivity
- ESR (Erythrocyte Sedimentation Rate)
- Do a wet mount smear and check for the presence of white cells and/or organisms. If no microscope available- take sample of vaginal fluid with a syringe, put in sterile screw-top tube, send to laboratory for microscopy). **If the cervical discharge appears normal and no WBCs are observed on the wet prep of vaginal fluid, the diagnosis of PID is unlikely!**

- Do NOT send vaginal swabs, products of conception or discharge; or pus swabs from superficial areas for MCS as it will be rejected by the laboratory.
- Where appropriate (e.g. during laparotomy) take aspirates of pus or tissue biopsies for culture, instead of pus swabs.

5. Test not routinely indicated

- C-reactive protein (non-specific and often normal in mild/moderate PID)
- Endocervical swab for gonorrhoea (only do if resistance is suspected or with failed first-line therapy). First remove any mucus from the cervix. Place in the appropriate transport gel and clearly mark “endocervical swab”.
- Testing for chlamydia (serology is inappropriate test; molecular tests not routinely available at NHLS)
- Ultrasound (insufficient evidence to support routine use- only request when clinical diagnosis is uncertain or with suspected tubo-ovarian abscess [TOA]). Ultrasound can be a specific criterion for PID if transvaginal sonography shows thickened, fluid-filled tubes with or without free pelvic fluid and/or tubo-ovarian complexes, or Doppler studies suggest pelvic infection (e.g., tubal hyperaemia).
- Laparoscopy (only when there is diagnostic uncertainty, and only by an experienced laparoscopist)
- Endometrial biopsy (histopathologic evidence of endometritis is a very specific diagnostic criterion for PID; only do endometrial biopsy if laparoscopic findings are negative)
- MRI

6. Decide on inpatient (parenteral) or out-patient (oral) treatment (use your clinical judgement as there are no specific criteria).

- The Gainesville classification is useful to understand the progression of disease and the different stages in the ascending infection, but is less useful for therapeutic choices. Its use is largely historic and academic(5).
- The following patients need to be admitted:
 - Surgical emergencies (e.g., appendicitis, ovarian torsion) cannot be excluded
 - Tubo-ovarian abscess
 - Peritonitis (acute abdomen)
 - Pregnancy
 - Clinically severe disease: severe illness, nausea and vomiting, or high fever
 - Unable to follow or tolerate an outpatient oral regimen, or no transport to come back in three days
 - No clinical response to oral antimicrobial therapy (already treated with oral antibiotics prior to presentation)

Antibiotic choice

(SA Essential Drug List 2014 and Western Cape Antibiotic guideline 2013 plus CDC 2015)

Outpatient treatment

Cefixime 400 mg orally as a single dose for gonorrhoea

PLUS

Doxycycline 100 mg twice a day orally for 14 days [Azithromycin for 7-10 days is an alternative to doxycycline]

PLUS

Metronidazole 400mg 12 hourly orally for 14 days.

Inpatient treatment

Cefixime 400 mg orally as a single dose for gonorrhoea

PLUS

Co-amoxiclav (Amoxicillin/clavulanic acid) 1.2g 8 hourly intravenously

Alternatively (more expensive, same bacterial cover):

Cefixime 400 mg orally as a single dose for gonorrhoea

PLUS

Ampicilin 2g 6 hourly intravenous (alternative Benzyl penicillin (Penicillin G), IV, 2 million units 6 hourly)

PLUS

Gentamicin 6mg/kg daily intravenously

PLUS

Metronidazole 400mg 12 hourly orally

Continue intravenous therapy until 24 hours after definite clinical improvement. Thereafter, change to:

Co-amoxiclav (Amoxicillin/clavulanic acid), oral, 875/125 mg 12 hourly to complete 14 days' therapy. There is no need to continue metronidazole once co-amoxiclav has been commenced.

PLUS

Oral doxycycline 100mg 12 hourly to complete 14 days' therapy.

If severe penicillin allergy:

Ciprofloxacin, oral, 500 mg as a single dose.

PLUS

Clindamycin, intravenously, 600 mg 8 hourly.

PLUS

Gentamicin, intravenously, 6 mg/kg daily.

Continue intravenous therapy until 24 hours after definite clinical improvement.

Thereafter, change to:

Doxycycline, oral, 100 mg 12 hourly to complete 14 days' therapy

PLUS

Metronidazole, oral, 400 mg 8 hourly to complete 14 days' therapy

Indications for surgery

The aim of management is to be as minimally invasive and as conservative as possible.

The following are indications for surgery

- A patient in septic shock
- No clinical response after 48 hours of inpatient therapy
- Sudden clinical deterioration on inpatient treatment
- Residual, symptomatic ovarian masses 6-8 weeks after successful therapy.

A consultant must make the decision to do surgery. Laparoscopy or laparotomy with drainage of abscess, unilateral or bilateral adnexectomy, or even hysterectomy may be needed. An organ-preserving approach should be undertaken regardless of the patient's wish for children since it reduces the risk of intraoperative complications to a minimum.

Transvaginal ultrasound-guided needle aspiration with concomitant antibiotics seems to be an attractive approach.(6)

Intra-uterine device

There are conflicting evidence on the removal or not of an IUD while treating for PID. The device can be left in the uterus, but close observation is needed. If there is no clinical improvement, remove the device and put the patient on alternative effective contraception. (7)

When tubo-ovarian abscess is diagnosed in postmenopausal women a thorough investigation to exclude concomitant malignant disease should be performed.

Further reading

1. Ross J. Pelvic inflammatory disease. *Medicine (Baltimore)*. 2010 May;38(5):255–9.
2. Khan ZE, Rizvi JH. Pelvic inflammatory disease and pelvic abscesses. *Rev Gynaecol Perinat Pract*. 2006 Sep;6(3–4):185–91.
3. Workowski KA. Sexually Transmitted Diseases Treatment Guidelines [Internet]. 2015 p. 78–82. Report No.: 64. Available from: <http://www.cdc.gov/mmwr/pdf/rr/rr6403.pdf>
4. Ross J, Judlin P, Jensen J, International Union against sexually transmitted infections. 2012 European guideline for the management of pelvic inflammatory disease. *Int J STD AIDS*. 2014 Jan;25(1):1–7.
5. Monif GR. Clinical staging of acute bacterial salpingitis and its therapeutic ramifications. *Am J Obstet Gynecol*. 1982 Jul 1;143(5):489–95.
6. Granberg S, Gjelland K, Ekerhovd E. The management of pelvic abscess. *Best Pract Res Clin Obstet Gynaecol*. 2009 Oct;23(5):667–78.
7. Sweet RL. Treatment of Acute Pelvic Inflammatory Disease. *Infect Dis Obstet Gynecol* [Internet]. 2011 [cited 2015 Aug 23];2011. Available from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3249632/>
8. CIRCULAR H109-2015 - CHANGES TO LABORATORY TESTING OF GENITAL SPECIMENS AND IMPROVING THE QUALITY

| | |
|-----------------------|---|
| AUTHORISED BY | GS Gebhardt |
| COMMITTEE RESPONSIBLE | GS Gebhardt, E Swart, L Vollmer |
| Antibiotic review | E de Cloedt, A Whitelaw |
| DATE EFFECTIVE | 1 September 2015 |
| REVIEW DATE | 1 September 2017 |
| EVIDENCE | Evidence basis for the above decision is available on request |



Signed: GS Gebhardt
Head: General Specialist Services; Obstetrics and Gynaecology