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Provincial Health Services Authority

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PELVIC INFLAMMATORY DISEASE (PID)

SCOPE

RNs (including certified practice RNs) must refer to a physician (MD) or nurse practitioner (NP) for ***all*** clients who present with suspected PID as defined by pelvic tenderness and lower abdominal pain during the bimanual exam.

ETIOLOGY

Pelvic inflammatory disease (PID) is an infection of the upper genital tract that involves any combination of the uterus, endometrium, ovaries, fallopian tubes, pelvic peritoneum and adjacent tissues. PID consists of ascending infection from the lower-to-upper genital tract. Prompt diagnosis and treatment is essential to prevent long-term sequelae.

Most cases of PID can be categorized as sexually transmitted and are associated with more than one organism or condition, including:

Bacterial:

- *Chlamydia trachomatis* (CT)
- *Neisseria gonorrhoeae* (GC)
- *Trichomonas vaginalis*
- *Mycoplasma genitalium*
- bacterial vaginosis (BV)-related organisms (e.g., *G. vaginalis*)
- enteric bacteria (e.g., *E. coli*) (rare; more common in post-menopausal people)

PID may be associated with no specific identifiable pathogen.

EPIDEMIOLOGY

PID is a significant public health problem. Up to 2/3 of cases go unrecognized, and under reporting is common. There are approximately 100,000 cases of symptomatic PID annually in Canada; however, PID is not a reportable infection so, exact numbers are unknown. Approximately 10-15% of women of reproductive age have had one episode of PID.

Risk Factors

- condomless sexual contact
- age less than 25 years
- recent change in sexual partner(s)
- partner with STI or STI-related symptoms
- recent or history of STI (e.g., GC, CT)
- history of PID
- procedures involving the upper genital tract, including:
    - dilatation & curettage (D&C)
    - recent intrauterine device (IUD) insertion (within past 3 weeks)
    - therapeutic abortion (T/A)

CLINICAL PRESENTATION

Clinical presentation varies widely both in severity and symptomology, with some clients presenting asymptomatically. Key cardinal client-reported signs and symptoms include:

- lower abdominal pain – typically bilateral (may present as unilateral)
- abnormal bimanual pelvic examination that includes one or a combination of the following findings:
    - cervical motion tenderness (CMT)
    - adnexal tenderness
    - fundal tenderness

Additional Signs & Symptoms

- fever >38ºC
- dyspareunia (deep)
- abnormal vaginal bleeding or spotting (post-coital, intermenstrual or menorrhagia)
- abnormal vaginal discharge
- mucopurulent cervical discharge and/or cervical friability
- urinary frequency
- dysuria
- nausea and/or vomiting
- pelvic pain and/or dysmenorrhea (painful periods)
- abdominal pain, guarding, rigidity and/or right upper quadrant abdominal pain (sign of perihepatitis, or Fitz-Hugh-Curtis syndrome)

PHYSICAL ASSESSMENT

- assess vulva, introitus, and vagina
- assess vaginal discharge (amount, colour, consistency and odour)
- assess vaginal pH
- assess vaginal walls and cervix during speculum examination
- complete bimanual exam, assessing for:
    - cervical motion tenderness (CMT)
    - adnexal tenderness
    - fundal tenderness
- palpate all four abdominal quadrants for pain, guarding, rigidity, and right upper quadrant pain
- assess temperature

Special Consideration

It is important to rule-out other potential causes of lower abdominal pain including, ectopic pregnancy, ovarian cysts, and gastrointestinal causes, including appendicitis. Cardinal signs and symptoms that require immediate consultation include: severe abdominal pain, including peritoneal signs (e.g. guarding, rigidity, rebound or shake tenderness), fever, and in cases with no response to oral medications.

DIAGNOSTIC AND SCREENING TESTS

Specimen	Tests
cervical or vaginal swab	Nucleic acid amplification test (NAAT) for GC, CT, and *Trichomonas vaginalis*
	GC culture & sensitivity (C&S)
vaginal swab (client- or clinician-collected)	vaginal swab or smear on slide for yeast and BV
	vaginal pH
	KOH whiff test
urine	pregnancy test
AND bimanual exam for tenderness	

If a client presents with symptoms suggestive of a urinary tract infection (UTI), consider assessing for lower UTI as outlined in the Uncomplicated Lower UTI DST.

Negative lab results do not rule-out PID.

MANAGEMENT

Diagnosis and Clinical Evaluation and Consultation and Referral

Immediately refer ***all*** clients who present with suspected PID to a MD or NP for assessment and treatment to avoid potential complications.

Note: When indicated, IUD removal is managed by a MD or NP. For mild-to-moderate PID, IUD removal during treatment is not necessary unless there is no clinical improvement within 72 hours after the onset of recommended antibiotic treatment.

Treatment

Recommended treatment options for gonorrhea reflect both current local antimicrobial resistance trends (see BCCDC Laboratory Trends Newsletters) and national STI guidelines.

RNs must refer ***all*** suspect cases of PID to a MD or NP for clinical evaluation and a client-specific order for empiric treatment.

Treatment	Notes
First Choice cefixime 800 mg PO in a single dose **AND** doxycycline 100 mg PO BID for 14 days **AND** metronidazole 500 mg PO BID for 14	1. Treatment for PID covers both GC/CT infections. 2. PID-related symptoms should begin to resolve within 48 to 72 hours of initiating antibiotics. 3. Review information on the BCCDC Medication Handouts and your agency's drug reference database, including: • Allergies, interactions and side effects • How to take the medication

days	• After-care information 4. **Cefixime:** • **DO NOT USE** if allergy to cephalosporins. • Consult with or refer to MD or NP if history of anaphylaxis or immediate reaction to penicillins. 5. **Ceftriaxone:** • **DO NOT USE** if allergy to cephalosporins. • To minimize discomfort, use 0.9 ml lidocaine 1% (without epinephrine) as the diluent for ceftriaxone IM. • Ventrogluteal site is preferred. • Review potential for side effects: pain, redness and swelling at the injection site, or diarrhea. If these persist or worsen, advise to contact a health care provider. 6. **Lidocaine:** • **DO NOT USE** if allergy to local anaesthetics. 7. **Doxycycline:** • **DO NOT USE** if allergy to doxycycline or other tetracyclines, or if pregnant. • Take with food/water to avoid potential adverse gastrointestinal effects. • **RE-TREAT** if 2 consecutive doses are missed within the first 5 days of treatment, or if 5 days of treatment is not completed. • Use of doxycycline as the first choice is preferable in the treatment of PID due to its increased effectiveness for the co-treatment of chlamydia. 8. **Metronidazole:** • Alcohol must be avoided 12 hours pre-treatment, during treatment and 24 to 48 hours pot-treatment with metronidazole. 9. **Azithromycin:** • **DO NOT USE** if allergy to macrolides. • Take with food/water to avoid potential adverse gastrointestinal effects. • Although rare, QT prolongation is more significant in older populations, those with pre-existing heart conditions, arrhythmias or electrolyte disturbances. It is unclear if young to mid-age healthy adults consuming a one-time dose of azithromycin could be similarly affected. Consult with or refer to a MD or NP if the client: o has a history of congenital or documented QT prolongation o has a history of electrolyte disturbance in particular hypokalemia, hypomagnesaemia o has clinically relevant bradycardia or cardiac arrhythmia
ceftriaxone 250 mg IM in a single dose **AND** doxycycline 100 mg PO BID for 14 days **AND** metronidazole 500 mg PO BID for 14 days	
Second Choice	
cefixime 800 mg PO in a single dose **AND** azithromycin 1 gm PO in a single dose and 1 gm PO in a single dose in 1 week (for a total of 2 doses given 7 days apart) **AND** metronidazole 500 mg PO BID for 14 days	
ceftriaxone 250 mg IM in a single dose **AND** azithromycin 1 gm PO in a single dose and 1 gm PO in a single dose in 1 week (for a total of 2 doses given 7 days apart) **AND** metronidazole 500 mg PO BID for 14 days	

	or cardiac insufficiency ○ is taking: ▪ Antipsychotics: pimozide (Orap®), ziprasidone (Zeldox®) ▪ Cardiac: dronedarone (Multaq®) ▪ Migraine: dihydroergotamine (Migranal®), ergotamine (Cafergot®)

Monitoring and Follow-up

- **Repeat testing:** No
- **Test-of-cure (TOC):** No
- **Follow-up:**
  - if test results are positive for CT/GC, review MD or NP treatment and follow-up plan, and confirm client received adequate treatment for the infection(s)
  - advise to seek urgent medical care if symptoms worsen (e.g., severe pain, signs of systemic infection)
  - return for re-assessment by MD or NP if symptoms have not improved in 3 days
  - refer to a MD or NP at reassessment if the client's symptoms are unresolved

Partner Counselling and Referral

- **Reportable:** No

  If CT/GC infection is confirmed, refer to appropriate DST for partner counselling and referral information.
- **Trace-back period:** last 60 days. If no partners during this time, last sexual contact
- **Recommended partner follow-up:** if CT/GC is the confirmed or suspected cause, empirically test and treat all contacts (see the Treatment of STI Contacts DST)

Potential Complications

Treatment of PID may not prevent long-term sequelae due to scarring and adhesion formation during the healing of the damaged tissues. The risk of potential complications increases with the number of and severity of PID episodes.

Potential complications include:

- Fitz-Hugh-Curtis syndrome
- tubo-ovarian abscess
- ectopic pregnancy
- chronic pelvic pain
- tubal factor infertility
- recurrent PID

Additional Client Education

Counsel client:

- to seek urgent medical care if symptoms worsen.
- to return for re-assessment if symptoms have not improved in 3 days
- to avoid sexual contact until the client and their partner(s) have completed screening, treatment, and symptoms have resolved.
- to complete all treatment as directed even if symptoms improve or resolve.
- to rest and use simple analgesia (e.g., acetaminophen, ibuprofen) for pain.
- Standard Client Education for Sexually Transmitted Infections and Blood-Borne Infections (STBBI)

REFERENCES

Australasian Sexual Health Alliance (ASHA). Australian STI management guidelines for use in primary care. Pelvic Inflammatory Disesase. 2018. Available from: http://www.sti.guidelines.org.au/syndromes/pid-pelvic-inflammatory-disease?highlight=WyJwZWx2aWMiLCJpbmZsYW1tYXRvcnkiLCJwZWx2aWMgaW5mbGFtbWF0b3J5Il0=.

Baines G, Currie I. Early treatment vital in pelvic inflammatory disease. Practitioner. 04/01/2018;262(1814):23-26.

British Association for Sexual Health and HIV (BASHH). United Kingdom National guideline for the management of pelvic inflammatory disease (2019 interim update). 2019.

Brunham RC, Gottlieb SL, Paavonen J. Pelvic inflammatory disease. The New England journal of medicine. 2015 May 21;372(21):2039–48.

Centers for Disease Control and Prevention (CDC). Pelvic inflammatory disease (PID). 2015 Sexually Transmitted Diseases Treatment Guidelines. 2015. Available from: https://www.cdc.gov/std/tg2015/pid.htm.

Curry A, Williams T, Penny ML. Pelvic Inflammatory Disease: Diagnosis, Management, and Prevention. American family physician. 2019 Sep 15;100(6):357–64.

Ford GW, Decker CF. Pelvic inflammatory disease. Disease-a-month: DM. 2016 Aug;62(8):301–5.

Government of Western Australia. Guidelines for managing sexually transmitted infections and blood-borne viruses. Pelvic inflammatory disease. Available from: https://ww2.health.wa.gov.au/Silver-book/Non-notifiable-infections/Pelvic-inflammatory-disease-PID.

Peirpert JF, Madden T. Long-term complications of pelvic inflammatory disease. UpToDate. 2018.

Public Health Agency of Canada (PHAC). Section 4: Management and treatment of specific syndromes: Pelvic inflammatory disease (PID) Canadian Guidelines on STI: Government of Canada. 2010. Available from: https://www.canada.ca/en/public-health/services/infectious-diseases/sexual-health-sexually-transmitted-infections/canadian-guidelines/sexually-transmitted-infections/canadian-guidelines-sexually-transmitted-infections-22.html.

PHAC. Supplementary statement for recommendations related to the diagnosis, management, and follow-up of pelvic inflammatory disease Canadian Guidelines on STI: Government of Canada. 2014. Available from: https://www.canada.ca/en/public-health/services/infectious-diseases/sexual-health-sexually-transmitted-infections/canadian-guidelines/sexually-transmitted-infections/canadian-guidelines-sexually-transmitted-infections-11.html.

Rakha SS. Pelvic inflammatory disease. InnovAiT. 2018;11(4):198-200. doi:10.1177/1755738017750998.

Ross J. Pelvic inflammatory disease: Pathogenesis, microbiology, and risk factors. UpToDate. 2019.

Ross J, Chacko MR. Pelvic inflammatory disease: Clinical manifestations and diagnosis. UpToDate. 2018.

Wiesenfild HC. Pelvic inflammatory disease: Treatment in adults and adolescents. UpToDate. 2019.