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PREVALENCE OF PELVIC INFLAMMATORY DISEASE (PID) IN INDIAN WOMEN: DIAGNOSIS AND MANAGEMENT—A REVIEW

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ABSTRACT

Background: Pelvic inflammatory disease (PID) is a spectrum of upper genital tract infections associated with infertility, ectopic pregnancy, and chronic pelvic pain. Robust national prevalence data from India are limited.

Methods: Narrative review of Indian studies on PID prevalence, diagnostic criteria, and management guidelines.

Results: Available Indian evidence shows PID prevalence of 11.55% in postmenopausal women (community study) and significant gynecologic inpatient burden (3-10% of admissions). Diagnosis relies on clinical criteria (lower abdominal pain + cervical/adnexal tenderness) supported by examination, microscopy, and imaging. Outpatient treatment is ceftriaxone 500 mg IM single dose+ doxycycline 100 mg BD + metronidazole 500 mg BD for 14 days. Hospitalization is indicated for severe disease, pregnancy, or non-response.

Conclusion: PID represents substantial gynecologic morbidity in India. Early clinical diagnosis and guideline-based therapy are essential to prevent long-term sequelae.

KEYWORDS: pelvic inflammatory disease, PID, India, prevalence, diagnosis, treatment, STIs.

INTRODUCTION

Pelvic inflammatory disease (PID) encompasses endometritis, salpingitis, tubo-ovarian abscess, and pelvic peritonitis, typically arising from ascending lower genital tract infection. *Neisseria gonorrhoeae* and *Chlamydia trachomatis* are classic pathogens, but anaerobes, mycoplasma, and vaginal flora frequently contribute [1]. Untreated PID risks infertility (10-15%), ectopic pregnancy (6-10-fold risk), and chronic pelvic pain (18%) [1].

In India, PID constitutes a major gynecologic health burden, though contemporary population-based prevalence data are sparse[2,3]. Hospital-based studies report PID in 3-10% of gynecologic admissions, while community studies suggest underrecognition[2,4]. This narrative review synthesizes available Indian evidence on PID prevalence among women, current diagnostic approaches, and management strategies, with emphasis on clinically actionable guidance for Indian practitioners.

METHODS

This narrative review was prepared by systematically reviewing indexed literature and guidelines relevant to PID in India. PubMed, PMC, and Google Scholar were searched using terms "pelvic inflammatory disease India," "PID prevalence India women," "PID diagnosis management India," and "STI guidelines India." Priority was given to Indian studies reporting prevalence, FOGSI/NACO guidelines, and recent international standards adaptable to Indian practice.[1-4]

RESULTS

Prevalence of PID in Indian Women

PID prevalence estimates in India vary by study design, age group, and setting, reflecting diagnostic heterogeneity and underascertainment[2,4].

A community-based study from Aligarh (n=340 postmenopausal women) reported PID prevalence of 11.55% (95% CI 8.2-15.6%), higher in rural (12.5%) than urban (10.6%) women[2]. Multiple sexual contacts (OR 3.2, $p<0.05$) and pelvic organ prolapse (OR 2.8, $p<0.05$) were significant risk factors. Although limited to postmenopausal women, this study suggests PID persistence beyond reproductive years, challenging the assumption that PID is primarily a disease of young women[2].

Hospital-based data indicate PID contributes to 3-10% of gynecologic admissions in India. FOGSI teaching materials cite broader estimates of 24-32% lifetime risk among Indian women, though this likely reflects cumulative clinical experience rather than population prevalence[5]. A 2025 cross- sectional study on pelvic floor disorders in northern India found PID history in 15.2% of women attending gynecology clinics, supporting a substantial clinical burden[6].

STI-associated PID prevalence is also notable. Genital chlamydia prevalence was 8.3% among women attending an Indian OBGYN outpatient department, with PID risk elevated in infected women[7]. Rural-urban disparities, delayed care-seeking, and limited STI screening

likely contribute to underdiagnosis[2.8].

Table 1: PID Prevalence Studies from India.

Study	Setting/Population	Prevalence	Key Findings	Reference
Aligarh community (2017)	Postmenopausal women (n=340)	11.55%	Rural > urban; multiple partners OR 3.2	[2]
Hospital reviews	Gynecologic admissions	3-10%	Significant inpatient burden	[3]
FOGSI estimate	General women	24-32% (lifetime)	Teaching estimate	[5]
Northern India (2025)	Gynecology clinic	15.2% (history)	Pelvic floor association	[6]
Chlamydia study	OBGYN outpatient	8.3% chlamydia (PID risk)	STI association	[7]

DIAGNOSIS

PID diagnosis in India relies primarily on clinical criteria because advanced diagnostics are not universally available[9,10]. Minimum criteria are lower abdominal/pelvic pain plus one of: cervical motion tenderness, uterine tenderness, or adnexal tenderness in sexually active women or those at STI risk[1].

Supportive criteria include temperature >38.3°C, mucopurulent cervical discharge/friability, >10 WBC/hpf on saline microscopy, elevated ESR/CRP, or documented gonorrhea/chlamydia. Indian guidelines emphasize abnormal vaginal discharge, dysuria, dysmenorrhea, and bimanual tenderness[9].

Differential diagnosis: Ectopic pregnancy, appendicitis, ovarian torsion/cyst rupture, UTI, endometriosis. β-hCG testing is mandatory in reproductive-age women.

Advanced diagnostics: Transvaginal ultrasound shows thickened endometria (>5 mm), fluid-filled tubes, or tubo-ovarian complex[1]. Laparoscopy confirms salpingitis (gold standard but rarely feasible initially)[1].

Table 2: PID Diagnostic Criteria (Adapted from CDC/Indian Guidelines).

Criterion Type	Findings
Minimum	Lower abdominal pain + cervical/uterine/adnexal tenderness[1,9]
Supportive	Fever >38.3°C, mucopurulent discharge, >10 WBC/hpf, ↑ESR/CRP, gonorrhea/chlamydia[1]
Specific	Endometrial biopsy (plasma cells), TVUS (tubal thickening), laparoscopy (salpingitis)[1]
Exclude	Pregnancy, appendicitis, torsions[1,9]

Management

Outpatient (mild-moderate): Ceftriaxone 500 mg IM single dose + doxycycline 100 mg BD PO 14 days + metronidazole 500 mg BD PO 14 days (CDC regimen)[1].

Indian NACO guidance: Ceftriaxone 250 mg IM + azithromycin 1 g PO single dose + metronidazole 400 mg BD 7 days.

Inpatient indications: Severe illness, pregnancy, abscess, surgical uncertainty, vomiting, non- response to outpatient therapy[1].

Inpatient regimen: Cefotaxime 1 g IV TDS + doxycycline 100 mg IV/PO BD + metronidazole 500 mg IV/PO BD; transition to oral after improvement[1,9].

Follow-up: Re-evaluate within 72 hours (outpatient) or 3 days (per NACO). No improvement warrants hospitalization/reassessment[1].

Partner management: Treat partners (past 60 days) empirically for gonorrhea/chlamydia regardless of symptoms. Abstinence until completion of therapy[1].

Complications: TOA requires image-guided drainage + IV antibiotics if >4 cm[1]. Hysterectomy/oophorectomy rarely indicated acutely.

DISCUSSION

PID prevalence data from India are constrained by methodological heterogeneity, but available evidence confirms substantial gynecologic morbidity.[2-4,6] The 11.55% postmenopausal prevalence underscores disease persistence beyond reproductive years, challenging conventional epidemiology. Hospital admission rates (3-10%) reflect advanced presentations, likely exacerbated by care-seeking delays common in India.

Clinical diagnosis remains cornerstone in resource-variable settings, balancing sensitivity

against specificity[1,9]. Empiric therapy initiation prevents sequelae, justifying the low diagnostic threshold[1]. Indian regimens align with international standards but emphasize single-dose ceftriaxone/azithromycin convenience.

Limitations include paucity of recent reproductive-age community studies and molecular diagnostics data. Future research should quantify contemporary PID burden using standardized criteria and explore STI screening impacts.

CONCLUSION

PID constitutes significant reproductive morbidity in Indian women. Early clinical diagnosis and guideline-directed therapy—outpatient ceftriaxone + doxycycline + metronidazole, hospitalization for severe cases, partner treatment—are essential to mitigate infertility and chronic sequelae. Enhanced STI surveillance and community awareness represent priority interventions.

AUTHOR CONTRIBUTIONS

Dr gitanshu: literature review, writing, guarantor.

CONFLICTS OF INTEREST

None declared.

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