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INFLAMMATORY GYNECOLOGICAL DISEASES: CAUSES, PREVENTION, AND MODERN THERAPY

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Abstract: This article examines the primary etiological factors, clinical manifestations, diagnostic approaches, and modern treatment strategies of inflammatory gynecological diseases (IGDs) in women. The pathogenesis of infections such as vaginitis, endometritis, and salpingitis, along with their complications and antibiotic-based therapies, are analyzed based on scientific sources. The article also provides preventive measures to maintain reproductive health and reduce recurrent infections.

Keywords: gynecological infections, vaginitis, endometritis, salpingitis, antibiotic therapy, sexually transmitted infections (STIs), microbiota, immunity

Introduction

Inflammatory gynecological diseases (IGDs) are among the most common conditions affecting women's reproductive systems. These disorders not only impair sexual and menstrual health but also negatively impact fertility and overall well-being. In recent years, the rise of sexually transmitted infections (STIs) has led to an increase in IGDs. If not diagnosed and treated in time, these conditions can become chronic, resulting in infertility, ectopic pregnancy, and sexual dysfunction. Early diagnosis and appropriate management are critical to prevent such complications.

Main Causes of Disease

a) Infectious Factors (85–90%). Aerobic and Anaerobic Bacteria:
Streptococcus spp., Staphylococcus spp., Escherichia coli, Gardnerella vaginalis, Bacteroides spp.
Sexually Transmitted Infections (STIs): Chlamydia trachomatis, Neisseria gonorrhoeae, Herpes simplex virus (HSV), Trichomonas vaginalis, Human papillomavirus (HPV)
Fungi: Candida albicans, especially in cases of poor hygiene or improper antibiotic use
b) Non-infectious Factors
Decreased local immunity
Hormonal imbalance (e.g., estrogen deficiency during menopause)
Improper use of intrauterine devices
Exposure to cold, stress, vitamin deficiencies
Misuse of vaginal douches and hormonal contraceptives
Disruption of the normal vaginal microbiota
- Note: Disruption of normal flora (Lactobacilli/Döderlein bacilli) leads to anaerobic overgrowth—main cause of bacterial vaginosis.

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Major types of disease

a) Vaginitis**.** Inflammation of the vaginal mucosa

Types: Bacterial vaginosis**,** Candidiasis (yeast infection)**,** Trichomoniasis

Bacterial Vaginosis (BV). Bacterial vaginosis is a condition caused by an imbalance in the normal bacterial flora of the vagina. It occurs when the naturally dominant lactobacilli are replaced by anaerobic bacteria such as Gardnerella vaginalis, Mobiluncus, Mycoplasma hominis, and others.

Causes:Excessive vaginal douching**,** Multiple sexual partners**,** Use of intrauterine devices (IUDs)**,** Use of antibiotics**,** Hormonal imbalances**,** Smoking

Symptoms: Thin, grayish-white vaginal discharge

Unpleasant, "fishy" odor, especially after intercourse

Itching and irritation may occur (but often absent)

Burning sensation during urination (rare)

Diagnosis:

Diagnosis is based on: Clinical symptoms**,** Vaginal pH > 4.5 **,** Positive “whiff test” (fishy odor when KOH is added)**,** Presence of "clue cells" on microscopic examination**,** Nugent score (Gram staining method to assess flora)

Prevention: Maintain proper vaginal hygiene**,** Limit number of sexual partners**,** Avoid unnecessary antibiotic use**,** Use condoms during sexual intercourse **,** Avoid vaginal douching

In bacterial vaginosis, a “fishy” smell is typical.

b) Endometritis**.** Inflammation of the uterine lining (endometrium)

Common after childbirth, abortion, or intrauterine procedures

Symptoms: lower abdominal pain, low-grade fever, purulent discharge, uterine enlargement

Chronic endometritis may result if not treated adequately.

c) Salpingitis and Oophoritis (Adnexitis). Inflammation of the fallopian tubes and ovaries, often occurring together

Symptoms: bilateral lower abdominal pain, fever, menstrual irregularities, possible infertility

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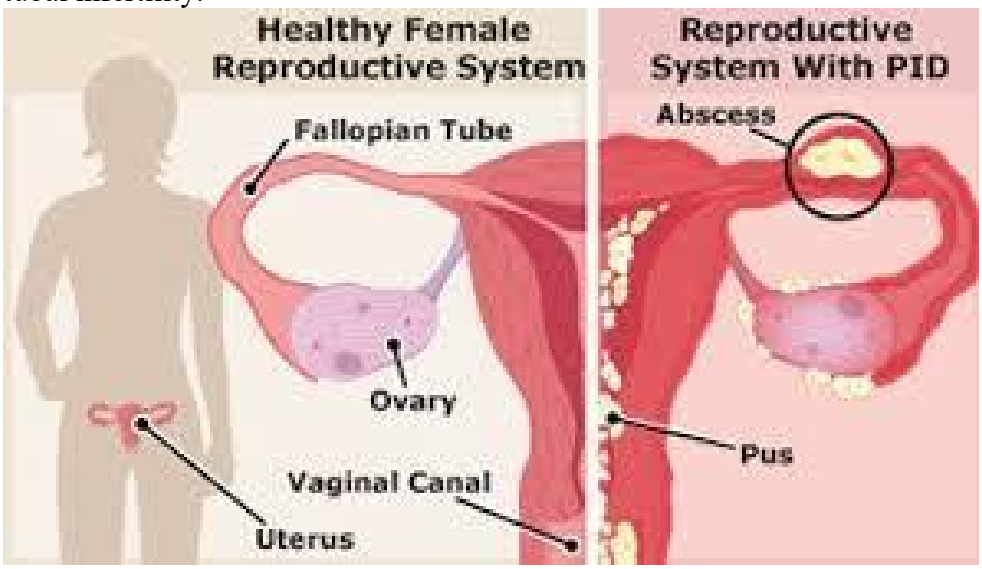
Chronic forms can cause irreversible tubal damage
-Clinical note: Chlamydia is responsible for 60% of salpingitis cases and is a major cause of tubal infertility.



Diagnostic Methods
a) Gynecological Examination, Assessment of vaginal and cervical condition, Bimanual palpation for pain and abnormal findings
b) Laboratory Testing. Vaginal smear microscopy (leukocytes, pathogens)
PCR (polymerase chain reaction) for STIs like chlamydia and gonorrhea
Vaginal pH testing — elevated in bacterial vaginosis (>4.5)|
Culture tests to determine antibiotic sensitivity
c) Imaging and Procedures
Ultrasound (US): evaluation of uterus and ovaries
Colposcopy: visualization of the cervix
Laparoscopy: used in complicated or chronic cases for both diagnosis and treatment
Preventive Measures
Maintain personal and sexual hygiene, Practice safe sex with consistent condom use, Avoid indiscriminate use of antibiotics, Use pH-balanced feminine hygiene products, Limit the use of vaginal douches, Regular gynecological check-ups (at least once a year), STI screening (especially PCR tests) from age 18 onward
Restore vaginal flora after treatment with probiotics

Tip: Educating women on reproductive health and promoting preventive care can significantly reduce the incidence of IGDs.

Conclusion

Inflammatory gynecological diseases remain a major concern for women's health worldwide, particularly during the reproductive years when their impact can be most detrimental. Conditions such as bacterial vaginosis, pelvic inflammatory disease, endometritis, and cervicitis not only compromise reproductive function but also significantly affect a woman's overall quality of life. If left untreated, these infections can lead to long-term complications including infertility, chronic pelvic pain, ectopic pregnancies, and an increased risk of miscarriage.

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Early detection and diagnosis through regular gynecological examinations and laboratory testing are crucial to identify these conditions in their initial stages. Treatment must be pathogen-specific and guided by antimicrobial sensitivity testing whenever possible to avoid antibiotic resistance and ensure effective recovery. Additionally, public health initiatives must emphasize the importance of personal hygiene, safe sexual practices, and timely medical consultations to prevent infection spread.

Educational campaigns aimed at both adolescents and adult women can play a vital role in increasing awareness and encouraging preventative behaviors. Integrating routine screening programs into primary health care services, especially in low-resource settings, is essential for early intervention and reducing the overall disease burden. Furthermore, individualized treatment plans based on patient history and comorbidities ensure more accurate and effective outcomes.

In conclusion, addressing inflammatory gynecological diseases requires a multifaceted approach involving prevention, education, early detection, and personalized care. Collaboration between health professionals, public health systems, and communities is key to safeguarding women's reproductive health and improving long-term health outcomes on a global scale.

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