Vaginitis & Cervicitis

Nabilah Nurul F
1810211077

Vaginal Ecosystem

the vaginal ecosystem consists of a variety of bacteria and metabolic products from the microbes and the host. **Acids, carbohydrates, proteins, and nucleic acids, fatty acids, and sugars from degrading bacteria** are present. There are nonpathogenic and pathogenic microbial species that exist in a ratio of approximately 200:1

Disruption or imbalance of the ecosystem results in **dominance of nonpathogenic and pathogenic** bacteria over Lactobacillus and **increases risk for BV** or bacterial vaginitis

Nonpathogenic and pathogenic bacteria found endogenously in a healthy vaginal ecosystem

Facultative Anaerobic Bacteria

Gram Positive	Gram Negative	Gram Variable
Lactobacillus crispatus	*Escherichia coli*[a]	*Gardnerella* spp.[a]
Lactobacillus casei	*Enterobacter agglomerans*[a]	
Lactobacillus gasseris	*Enterobacter aerogenes*[a]	
Lactobacillus insers	*Enterobacter cloacae*[a]	
Lactobacillus jensei	*Klebsiella oxytoca*	
Nonhemolytic streptococci	*Klebsiella pneumonia*	
Streptococcus agalactiae[a]	*Morganella morganii*[a]	
Streptococcus viridans	*Proteus mirabilis*	
Staphylococcus epidermidis	*Proteus vulgaris*	
Enterococcus faecalis[a]	*Mycoplasma* spp.[a]	
	Ureaplasma spp.[a]	
	Haemophilus influenzae[a]	

Obligate Anaerobic Bacteria

Gram Positive	Gram Negative
Eubacterium spp.	*Fusobacterium necrophorum*[a]
Peptococcus niger[a]	*Fusobacterium nucleatum*[a]
Peptostreptococcus anaerobius[a]	*Prevotella bivia*[a]
Corynebacterium spp.	*Prevotella melaninogenica*[a]
	Veillonella spp.
	Mobiluncus spp.[a]

Physiological Discharge

- Mucus is **produced by the periurethral, Skene's, and Bartholin glands, and the cervix**.
- Because there are no mucosal cells in the vagina, the discharge is a transudate secreted through the vaginal epithelium and from the cervix. Physiologic discharge (also known as leukorrhea) is therefore a culmination of fluid, cells, and cellular debris

Characteristic	Description
Discharge	
Quantity	Variable, depending on phase of menstrual cycle
Color	Clear, white, or light gray
Consistency	Thin liquid to pasty
pH	Usually 3.8–4.2
Odor	None
Vaginal epithelium	Pink and rugated
Microscopy (saline preparation)	
Squamous cells	Homogeneous cytoplasm, nucleus is small, well-demarcated and centrally located, distinctive cell membrane
White blood cells	Fewer than 5/hpf (400× magnification)
Dominant bacteria	Rods of bacteria are individually free floating in the microscopic field

VAGINITIS

- The term "**vaginitis**" is a general diagnosis that **includes a wide array of conditions** in every age group. Of these, uncomplicated bacterial vaginosis (BV), vulvovaginal candidiasis, and trichomoniasis are diagnosed in 70% of patients. of those, 40% to 50% have BV, 20% to 25% have vaginal candidiasis, and 15% to 20% have trichomoniasis. The remaining 30% are undiagnosed and, among others, can have physiologic discharge (leukorrhea), atrophic vaginitis, vulvar dermatologic abnormalities, or vulvodynia.

- Vaginitis is defined as **a spectrum of conditions that cause vaginal and sometimes vulvar symptoms**, such as itching, burning, irritation, odor, and vaginal discharge. Vulvovaginal complaints are one of the most common reasons for women to seek medical advice.

Etiology and Risk Factors

- ✓ The most common infectious causes of vaginitis are bacterial vaginosis, vulvovaginal candidiasis, and trichomoniasis.

Table 2. Risk Factors Contributing to Vaginitis

Type of vaginitis	*Risk factors*
Bacterial vaginosis	Low socioeconomic status, vaginal douching, smoking, use of an intrauterine contraceptive device, new/multiple sex partners, unprotected sexual intercourse, homosexual relationships, frequent use of higher doses of spermicide nonoxynol-9
Trichomoniasis	Low socioeconomic status, multiple sex partners, lifetime frequency of sexual activity, other sexually transmitted infections, lack of barrier contraceptive use, illicit drug use, smoking
Vulvovaginal candidiasis	Vaginal or systemic antibiotic use, diet high in refined sugars, uncontrolled diabetes mellitus
Atrophic vaginitis	Menopause, other conditions associated with estrogen deficiency, oophorectomy, radiation therapy, chemotherapy, immunologic disorders, premature ovarian failure, endocrine disorders, antiestrogen medication
Irritant contact dermatitis	Soaps, tampons, contraceptive devices, sex toys, pessary, topical products, douching, fastidious cleansing, medications, clothing
Allergic contact dermatitis	Sperm, douching, latex condoms or diaphragms, tampons, topical products, medications, clothing, atopic history

The lack of estrogen in the prepubertal and postmenopausal states results in a **thin vaginal epithelium with a high pH (4.7)**. The ecosystem before puberty contains a different variety of organisms from that which is fully estrogenized, and includes skin and fecal flora. Colonization of **Lactobacilli is encouraged by estrogen stimulation of glycogen with subsequent decrease in pH to less than 4.7.5** Addition of estrogen causes an increase in vaginal discharge, which often leads to the conclusion that the patient has vulvovaginal candidiasis, despite objective evidence on physical examination and office-based laboratory testing to the contrary.

Sign and Symptoms

Table 1. Causes, Symptoms, and Signs of Vaginitis

		Clinical symptoms			Clinical signs	
Type	*Etiology*	*Discharge*	*Pain*	*Pruritus*	*Vagina*	*Vulva*
Bacterial vaginosis	*Gardnerella vaginalis, Mycoplasma hominis* Anaerobic bacteria: *Prevotella* species, *Mobiluncus* species	Malodorous; homogenous; clear, white, or gray; fishy odor	Not primary symptom	Not primary symptom	No signs of inflammation	Unaffected
Trichomoniasis	*Trichomonas vaginalis*	Green-yellow, frothy	Pain with sexual intercourse, vaginal soreness, dysuria	Not primary symptom	Signs of inflammation, "strawberry cervix"	Vestibular erythema may be present
Vulvovaginal candidiasis	*Candida albicans, Candida krusei, Candida glabrata*	White, thick, lack of odor	Burning, dysuria, dyspareunia	Frequent	Signs of inflammation, edema	Excoriations
Atrophic vaginitis	Estrogen deficiency	Yellow, greenish, lack of odor	Vaginal dryness, pain with sexual intercourse	Rare	Vagina mildly erythematous, easily traumatized	Vestibule thin and dry; labia majora lose their subcutaneous fat; labia minora irritated and friable
Erosive lichen planus	Etiology is unknown	Yellow or gray	Intense pain, dyspareunia, postcoital bleeding	Intense	Erythema with friable epithelium	Erosions, white plaques
Irritant or allergic contact dermatitis	Contact irritation or allergic reaction with episodic flares	Minimal	Burning on acute contact, soreness	More likely in allergic reactions	Vulvar erythema possible	Erythema with or without edema; vesicles or bullae rare

Feature	Vulvovaginal candidiasis	Bacterial vaginosis	Trichomoniasis
Symptoms	Thick white discharge	Thin discharge	Scanty to profuse or frothy yellow discharge
	Non-offensive odour	Offensive or fishy odour	Offensive odour
	Vulval itch Superficial dyspareunia Dysuria	No discomfort or itch	Vulval itch or soreness Dysuria (external) Low abdominal pain Dyspareunia
Signs	Vulval erythema, oedema, fissuring, satellite lesions	Discharge coating vagina and vestibule No inflammation of vulva	Vulvitis and vaginitis 'Strawberry' cervix

History and Physical examination

- Patient history should include the characteristics of the discharge such as color, consistency, and amount.
- **Severity, duration, and recurrence** of symptoms should be elicited, along with use of any products that contact the vulva and vagina., a history of and risk factors for sexually transmitted infections
- The pelvic examination starts with a careful external inspection. On speculum examination, **characteristics of the vaginal mucosa (rugated or atrophic) and discharge** are noted.
- Cervical friability, tenderness of the cervix, pain with palpation of the uterus, or presence of adnexal masses may indicate cervicitis or upper genital tract disease

✓ Physicians traditionally diagnose vaginitis using the combination of symptoms, physical examination, pH of vaginal fluid, microscopy, and the whiff test.

✓ Approximately 30 percent of symptomatic women remained undiagnosed after clinical evaluation.

Among multiple individual symptoms and signs, only the following were found to be helpful for the diagnosis of vaginitis in symptomatic women:

✓ A lack of itching makes diagnosis of vulvovaginal candidiasis unlikely

✓ A lack of perceived odor makes bacterial vaginosis unlikely

✓ Presence of a fishy odor on examination is predictive of bacterial vaginosis

✓ Lack of odor is associated with vulvovaginal candidiasis

Patient history for vaginal complaints

Characteristic	Description
Discharge	Quantity Color Viscosity Relationship to menstrual cycle
Odor	Fishy or musty (bacterial vaginosis) Oniony (perspiration) Timing related to hour of day Timing related to bathing habits Clothing/underwear
Sensation felt	Itching Burning Irritation Acute, chronic or acute exacerbations of chronic sensation Combinations
Location	Vulva, vestibule or vagina
Dyspareunia	Acute or chronic Insertion vs deep thrust
Treatments	Antifungals, antibiotics, corticosteroids, or estrogen Topical, oral, or both Length of therapy for each course Response (complete resolution, partial resolution, or no response)
Irritants	Soaps, feminine hygiene products, douching Sensitizing agents such as benzocaine
Sexual history	Testing for sexually transmitted infections History of abuse or rape

Lab Test

- a sample of the discharge should be collected from that picked up on the speculum or using a swab in the posterior vagina for saline and (KOH) preparations. A sample for pH should be taken from the mid vagina. Samples for bacterial culture, fungal culture, and nucleic acid amplification tests for gonorrhea, chlamydia, and trichomonas should be considered.
- **The saline and 10% KOH wet preps** are the main tests used for diagnosis of vaginitis.
- The fishy (amine) odor of BV can be noted by performing a "whiff" test of the 10% KOH preparation
- Findings like trichomonads, clue cells, yeast pseudohyphae or buds, presence or absence of lactobacilli, and presence of leukocytes are evaluated on the saline wet preparation. White blood cells on saline microscopy are nonspecific and can indicate trichomoniasis, vaginal candidiasis, atrophic vaginitis, bacterial vaginitis, cervicitis, or upper genital tract infection.

Table 5
Testing for causes of vaginitis

Condition	Vaginal pH	Microscopy[a]	Amines	Current Gold Standard
Normal	<4.7	Normal squamous cells, few white blood cells, background bacillary flora	Negative	Clinical diagnosis
Vulvovaginal candidiasis	<4.7	Hyphae, blastospores	Negative	Yeast culture with speciation
Bacterial vaginosis	≥4.7	Clue cells, coccobacillary flora	Positive	Gram stain (Nugent score)
Trichomoniasis	Varies	Trichomonads	Variable	*Trichomonas vaginalis* NAAT
Atrophic vaginitis	≥4.7	Parabasal cells, decreased mixed flora	Negative	Maturation index
Desquamative inflammatory vaginitis	≥4.7	Parabasal cells, white blood cells	Negative	Clinical diagnosis
Cytolytic vaginosis	≤4.2	Abundant background bacillary flora, fragmented squamous cells	Negative	Clinical diagnosis

Table 3. Laboratory Testing for Infectious Causes of Vaginitis

Test	*Bacterial vaginosis*	*Trichomoniasis*	*Vulvovaginal candidiasis*
Point-of-care tests*			
Amsel criteria	Sensitivity, 69%; specificity, 93%	NA	NA
pH	pH > 5: sensitivity, 77%; specificity, 35%	pH > 5.4: sensitivity, 92%; specificity, 51%	pH < 4.9: sensitivity, 71%; specificity, 90%
Whiff test (the amine odor produced by mixing 10% potassium hydroxide solution with a sample of vaginal discharge)	Positive test: sensitivity, 67%; specificity, 93%	Positive test: sensitivity, 67%; specificity, 65%	Negative test
Fem Exam card (Cooper Surgical, Shelton, Conn.) Two colorimetric strips: card 1 measures pH and amine levels; card 2 measures proline aminopeptidase activity	Cards 1 and 2 combined: sensitivity, 91%; specificity, 61% Rapid (two minutes), less subjective than whiff test, easily performed	NA	NA
Microscopy (with 10% potassium hydroxide solution, saline)	Clue cells, bacilli with corkscrew motility, scant or absent lactobacilli Sensitivity, 53 to 90%; specificity, 40 to 100%	Motile protozoa with flagella; more leukocytes than epithelial cells Sensitivity, 50 to 70% (may be increased by vaginal lavage to 74%); specificity, 100%	Budding filaments, mycelia with 10% potassium hydroxide solution Sensitivity, 61%; specificity, 77%
pH, trimethylamine card (QuickVue Advance Quidel, San Diego, Calif.)	Sensitivity, 53%; specificity, 97% Rapid, simple, comparable with pH and whiff test	NA	NA
Proline aminopeptidase card (Pip Activity TestCard, Litmus Concepts, Inc., Santa Clara, Calif.) Indirect test for a chemical produced by the organisms associated with bacterial vaginosis	Sensitivity, 70%; specificity, 81% Rapid, simple, comparable with Fem Exam card 2	NA	NA
OSOM Trichomonas Rapid Test (Genzyme Diagnostics, Cambridge, Mass.), uses color immunochromatographic "dipstick" technology with murine monoclonal antibodies	NA	Sensitivity, 90 to 100% 10 minutes to complete test	Sensitivity, 90 to 100%
BD Affirm VPIII Microbial Identification Test (BD Diagnostic Systems, Sparks, Md.)	Sensitivity, 95 to 100% 45 minutes to complete test	Sensitivity, 90 to 100% False-positive results may occur, especially in low-prevalence groups	Polymerase chain reaction more sensitive than culture in detecting *Candida*; not yet commercially available as a diagnostic test
Patient-performed tests			Positive culture alone does not necessarily indicate that the yeast identified are responsible for vaginal symptoms
Over-the-counter test for vaginal infections (Fem-V; Synova Healthcare, Inc., New York, NY)	Positive test suggests possibility of bacterial vaginosis and need for physician visit (20% false-positive rate)	Positive test suggests possibility of trichomoniasis and need for physician visit (20% false-positive rate)	Negative test suggests possibility of yeast infection Over-the-counter antifungal treatment recommended (10% false-negative rate)
Over-the-counter rapid yeast detection test (Savyon Diagnostics, Ashdod, Israel): uses the concept of lateral flow immunoassay systems	NA	NA	Positive test: sensitivity, 73%; specificity, 84% Patient-performed tests have results similar to physician-performed tests Negative test: not sensitive enough to rule out yeast infection and avoid a culture

Feature	Physiologic Discharge	Bacterial Vaginosis	Trichomoniasis	Candida
Color	White	Gray	Grayish Yellow	White
Amine Odor	Absent	Present	Present	Absent
Consistency	Nonhomogeneous	Homogeneous	Purulent, often mixed with bubbles	"Cottage Cheese"
Presence	Dependent	Adherent to Walls	Often pooled in Fornix	Adherent to Walls
Discharge @ introitus	Rare	Common	Common	Common
Vulva	Normal	Normal	Edematous Erythematous	Erythematous
Vaginal Mucosa	Normal	Normal	Usually normal	Erythematous
Cervix	Normal	Normal	"Strawberry"	Patches of Discharge
pH	≤ 4.5	>4.5	≥ 5.2-7	≤ 4.5
Presenting Complaints	None or Ovulatory Change	Odor & increased discharge	Itching & Burning	Itching & Burning
Micro Findings	Squamous epis, lactobacilli, few WBCs	Rare WBCs, increased bacteria, esp thin crescent shaped rods, "clue" decreased lactobacilli	Motile trichomonads WBCs	Pseudohyphae Yeast buds WBC Lactobacilli
Relationship to Menses	Increased at midcycle	N/A	Increased during menses	Increased before menses w/relief after

Bacterial Vaginosis

- It occurs when the normal Lactobacillus species in the vagina are replaced with anaerobic bacteria resulting in reduced levels of hydrogen peroxide and organic acids usually present in the vagina
- Subsequently, there is an overgrowth of facultative anaerobic organisms. Specific bacteria often found in patients with BV include **Gardnerella vaginalis, Mycoplasma homonis, Bacteroides species, Peptostreptococcus species, Fusobacterium species, and Prevotella species, among others**
- The fishy odor caused by production of amines from anaerobic bacteria found in many of these patients is predictive of bacterial vaginosis. When vaginal alkalinity increases after sexual intercourse (with the presence of semen) and during menses (with the presence of blood), the odor becomes more prevalent. Vaginal discharge is a more common but less specific symptoms
- Bacterial vaginosis, even when asymptomatic, is associated with a high incidence of endometritis and pelvic inflammatory disease following abortion and gynecologic procedures
- Bacterial vaginosis is associated with late miscarriages, premature rupture of membranes, and preterm birth. Both symptomatic and asymptomatic bacterial vaginosis have been strongly linked with an increased risk of human immunodeficiency virus (HIV)-I and HSV

Risk Factors

- Sexual practices that increase the risk of BV include an increased frequency of intercourse, receptive oral sex, and a greater number of sexual partners.
- Hormonal concentrations and shifts such as in pregnancy, with use of exogenous hormones, and the normal menstrual cycle also affect the normal flora and risk of BV.
- Presence of a foreign body and use of medications such as antibiotics, douching agents, and spermicides also alter the vaginal ecosystem

Sign and Symptoms

abnormal **vaginal discharge with a fishy odor**. Pruritus, irritation, and burning of the vulva are not seen in the typical BV case. The hallmark physical examination finding is **a white/gray vaginal discharge that is seen on the vaginal sidewalls with speculum examination**.

Diagnosis

Diagnostic Testing

Amsel's criteria are used for office diagnosis of BV on saline wet preparation, and of the following 4 findings, 3 are required[50]:

1. Thin, homogeneous gray vaginal discharge,
2. Vaginal pH greater than 4.5,
3. Positive amine test ("whiff test"), and
4. Clue cells comprising greater than 20% of all squamous cells on saline microscopy.

- The **Nugent score** is used for research on BV, and is considered the gold standard test. It is performed on a Gram stain and assigns a value to different bacterial types resulting in a score; **a score of 7 or greater is considered positive for BV.**
- DNA testing by **realtime PCR** is available, which reports the presence or absence of Lactobacillus spp., Atopobium vaginae, Megasphaera spp., and G vaginalis.

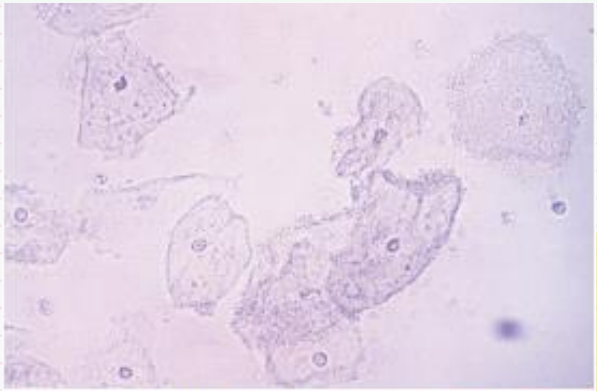

Figure 1. Clue cells (400 ×). Vaginal epithelial cells with borders obscured by adherent coccobacilli seen on saline wet-mount preparation.

Treatment

Table 8
Treatment for acute bacterial vaginosis

Medication	Dose	Notes
Metronidazole 500 mg Tablet	500 mg Twice Daily for 7 d	No alcohol consumption for until after 24 h from the last dose
Metronidazole 0.75% gel	5 g daily for 5 d	No alcohol consumption for until after 24 h from the last dose
Clindamycin 2% cream	5 g at bedtime for 7 d	May weaken latex or rubber condoms and diaphragms therefore, do not use until 5 d after the last treatment
Tinidazole 2 g tablet	2 g daily for 2 d	No alcohol consumption until after 5 d from the last dose
Tinidazole 1 g tablet	1 g daily for 5 d	No alcohol consumption until after 5 d from the last dose
Clindamycin 300 mg tablet	300 mg twice daily for 7 d	
Clindamycin 100 mg ovule	1 ovule at bedtime for 3 d	May weaken latex or rubber condoms and diaphragms therefore, do not use until 72 h after the last treatment

- Treatment of BV **can be oral or topical**. All of the azole therapies have equivalent efficacy.
- For patients with recurrent BV, treatment of sexual partners has **not shown a benefit and is not recommended.**
- If treatment fails, the patient can often be cured with an additional course of the same therapy.
- Nonpregnant women with symptomatic disease **require antibacterial therapy** to relieve vaginal symptoms. Other benefits of treatment include decreasing the risk of HIV and other sexually transmitted infections and reducing infectious complications following abortion or hysterectomy

Recurency

Most relapses of bacterial vaginosis occur within the first year and strongly correlate with new sex partners.

Trichomoniasis Vaginitis

Penyakit infeksi protozoa yang disebabkan oleh Trichomonas vaginalis

- Symptoms and signs of trichomoniasis are not specific, and diagnosis by microscopy is more reliable.
- Features suggestive of trichomoniasis are trichomonads seen with saline, leukocytes more numerous than epithelial cells, positive whiff test, and vaginal pH greater than 5.4
- **more common** in sexually transmitted disease (STD) clinic patients and incarcerated women.
- Regardless of symptomatology, it is easily transmitted between partners during penile–vaginal intercourse and is **best prevented with correct condom use**.
- Sequelae of trichomonas infection includes a 2- to 3-fold increase in risk for HIV acquisition, preterm birth, low birth weight, and other adverse pregnancy outcomes in pregnant women

- ✓ Symptomatic women complain of an abnormal vaginal **discharge** that is yellow-green, dyspareunia, vulvovaginal soreness and itching, and pain with urination. However, 70% to 85% of infected persons have minimal or no symptoms.
- ✓ **Physical examination** findings include vulvovaginal erythema, discharge, and occasionally punctate hemorrhages of the vaginal mucosa and cervix

Trichomonas vaginalis

Klasifikasi

Golongan : Animalia
Filum : Protozoa
Kelas : Zoomastigophora
Ordo : Mastigophora
Genus : Trichomonas
Species : Trichomonas vaginalis

Manusia merupakan hospes parasit ini dan menyebabkan Trichomoniasis pada vagina dan pada pria prostatis.

Pada wanita tempat hidup parasit ini di vagina dan pada pria di uretra dan prostat.Parasit ini hidup di mukosa vagina dengan makan bakteri dan lekosit Trichomonas vaginalis bergerak dengan cepat berputarputar diantara sel-sel epitel dan lekosit dengan menggerakkan flagel anterior dan membran bergelombang.

Trichomonas vaginalis tidak memiliki stadium kista tetapi hanya ditemui dalam stadium Tropozoit dan ciri-cirinya adalah : Bentuknya oval atau piriformis, memiliki 4 buah flagel anterior, flagel ke 5 menjadi axonema dari membran bergelombang (membrana undulant) , pada ujung pasterior terdapat axonema yang keluar dari badan yang diduga untuk melekatkan diri pada jaringan sehingga menimbulkan iritasi, memiliki 1 buah inti, memiliki sitostoma pada bagian anterior untuk mengambil makanan, perkembangbiakan dengan cara belah pasang

Dalam perkembangbiakannya parasit ini mati pada PH kurang dari 4,9 inilah sebabnya parasit ini tidak dapat hidup disekret vagina yang asam (PH : 3,8-4,4), parasit ini tidak tahan pula terhadap desinfektan zat pulasan dan antibiotik

Faktor Risiko

Usia tua, douching, berganti ganti pasangan sexual, tidak menggunakan proteksi saat hubungan seksual (kondom), STI rekuren, penggunaan obat injeksi

T vaginalis **dapat ditularkan secara vertikal ke bayi** baru lahir, menyebabkan vaginitis, infeksi saluran kemih, dan / atau infeksi pernapasan yang dapat mengancam jiwa

Manifestasi Klinis

- Bau vagina abnormal (sering digambarkan sebagai musty)
- Gatal, terbakar, atau nyeri vulvovaginal
- Dyspareunia (nyeri selama hubungan seksual), seringkali keluhan utama
- Dysuria (nyeri saat buang air kecil)
- Pendarahan postcoital
- Nyeri perut bagian bawah

trichomoniasis dapat menyebabkan serviksitis ditandai dengan 2 tanda utama berikut:

- Debit purulen di kanal endocervical
- Pendarahan endocervical yang mudah diinduksi

Pada pemeriksaan fisik ditemukan :

- discharge kuning-kehijauan, berbusa pada 10%-30% kasus,bau.
- Inflamasi / Eritema edema vulva, pruritus, nyeri pada dinding vagina.
- Terdapat titik-titik hemoragik pada dinding dan portio vaginalis

- However, **routine screening is recommended in women with HIV** because of an increased risk for pelvic inflammatory disease.
- The most commonly used diagnostic test is the wet mount, which has poor sensitivity (51%–65%).
- Nucleic acid amplification testing (NAAT) is highly sensitive and detects RNA by transcription-mediated amplification. NAATs can be used on vaginal, endocervical, or urine specimens for women

✓ Polymerase chain reaction analysis of samples from tampons and introital specimens is more accurate than vaginal or cervical swabs and Pap smear

Komplikasi

- Komplikasi lainnya termasuk cervicitis dan infeksi kelenjar adnexa, endometrium, dan Skene dan Bartholin.
- Penyakit radang panggul dan abses tubo-ovarium juga dapat terjadi.
- Pada pria tanpa gejala, *infeksi vagina T biasanya* bermanifestasi sebagai urethritis
- infeksi *T vaginalis* juga meningkatkan kerentanan terhadap virus lain, termasuk HIV, herpes dan human papillomavirus (HPV)
- Komplikasi trichomoniasis yang tidak diobati pada pria termasuk prostatitis, epididymitis, penyakit stricture uretra, dan infertilitas, berpotensi disebabkan oleh penurunan motilitas dan kelangsungan hidup sperma

Treatment

Signs, symptoms, and possibly transmission of *T vaginalis* are reduced with treatment.[7] In women with HIV, adverse outcomes are reduced.[7] The nitroimidazoles are the only class of antimicrobial drugs known to be effective. Metronidazole and tinidazole are approved by the US Food and Drug Administration for this indication. Recommended regimens include:

- Metronidazole 2 g orally in a single dose,
- Tinidazole 2 g orally in a single dose, and
- Metronidazole 500 mg orally twice a day for 7 days (for women with HIV).

Cervicitis

Cervicitis adalah sindrom klinis yang ditandai dengan peradangan terutama epitel kolomium endocervix Rahim. didiagnosis secara karakteristik oleh: **(1) eksudat endocervical yang terlihat, atau mucopurulent di saluran endocervical atau pada spesimen swab endocervical** dan / atau **(2) pendarahan endocervical yang berkelanjutan** dan mudah diinduksi ketika kapas dilewatkan dengan lembut melalui serviks os.

Epidemiologi

- Insiden tertinggi adalah pada wanita yang aktif secara seksual berusia 15 hingga 24 tahun.
- (CDC) memperkirakan bahwa lebih dari 19 juta infeksi menular seksual (STI) baru terjadi setiap tahun, hampir setengahnya di antara orang-orang berusia 15-24 tahun
- lebih umum pada wanita positif human immunodeficiency virus (HIV), dengan perkiraan 7400 per 100.000 wanita yang didiagnosis dengan HIV

Faktor risiko

- Beberapa pasangan seks
- Usia muda
- Status perkawinan tunggal
- Tempat tinggal perkotaan
- Status sosial ekonomi rendah
- Alkohol atau penggunaan narkoba
- Kecenderungan genetik,

Etiologi

- Etiologi dapat secara luas diklasifikasikan menjadi **menular dan tidak menular**.
- **Agen infeksi** *termasuk Neisseria gonore, Chlamydia trachomatis*, dan kurang umum, herpes simpleks, *Trichomonas vaginalis, dan Mycoplasma genitalium*.
- Neisseria dan klamidia terutama menginfeksi epitel kolom endocervix, sedangkan HSV dan trichomonas mempengaruhi epitel ektopik. Vaginosis bakteri juga telah dikaitkan dengan serviks.
- **Penyebab tidak menular** termasuk iritasi mekanis dan kimia. Instrumen bedah atau benda asing seperti pessaries, kondom, diafragma, tutup serviks, atau tampon dapat menyebabkan trauma mekanis. Iritasi kimia menyebabkan reaksi alergi dan termasuk sabun, spermisida, lateks, douches vagina, dan krim kontrasepsi.
- Penyakit radang sistemik seperti **lichen planus dan sindrom Behcet** juga telah berimplikasi pada cervicitis.
- Keadaan **hipoestrogenik yang terlihat pada menopause** alami atau bedah dapat mencetuskan cervicitis. Hal ini disebabkan oleh atrofi lapisan vagina dan rahim.

Pemeriksaan fisik

- Gejala khas yang dilaporkan termasuk keputihan berurut atau mucopurulent dan pendarahan antarmenstruasi atau pasca-koital. Dyspareunia, gejala saluran kemih (untuk uretritis bersamaan), dan nyeri perut (untuk PID atau endometritis).
- Semua wanita dengan kecurigaan cervicitis harus menjalani pemeriksaan panggul dan vagina.
- Pemeriksaan fisik harus mencakup **survei umum, inspeksi eksternal, dan spekulum panggul dan pemeriksaan bimanual**. Pada pasien tertentu, pemeriksaan harus dilakukan..
- Tanda-tanda klasik termasuk keluarnya cairan kuning-hijau atau mukoid dari os dan pendarahan endocervix yang mudah menyentuh dengan aplikator kapas (juga disebut friability), leher Rahim eritematous edematous .ingat**, px fisik normal tidak mengesampingkan infeksi.**
- **perdarahan punctate (vagina stroberi)** menunjukkan trichomonas, sementara **vesikel dan bisul** menunjukkan infeksi HSV. Mycoplasma cervicitis tidak bergematik pada banyak pasien; oleh karena itu, banyak kasus tetap tidak terdiagnosis
- Pemeriksaan fisik sangat penting untuk evaluasi dan diagnosis serviksitis, tetapi tidak boleh terbatas pada daerah panggul. Penilaian untuk limfadenopati, lesi kulit, lesi oral, kemerahan sendi atau pembengkakan, nyeri perut, dan kelembutan sudut costovertebral dapat menunjuk ke infeksi yang disebarluaskan

Tatalaksana

Infeksi Chlamydial, CDC merekomendasikan :

- Azitromisin 1 g oral (PO) dalam satu dosis, ATAU
- Doxycycline 100 mg PO dua kali sehari (bid) selama 7 hari

Agen alternatif yang efektif untuk azitromisin dan doxycycline untuk pengobatan klamidia termasuk eritromisin, levofloxacin, dan ofloxacin, sebagai berikut :

- Basis eritromisin 500 mg PO empat kali sehari (qid) selama 7 hari, ATAU
- Eritromisin etilsuccinate 800 mg PO qid selama 7 hari, ATAU
- Levofloxacin 500 mg PO setiap hari (qd) selama 7 hari, ATAU
- Ofloxacin 300 mg PO tawaran selama 7 hari

Untuk **infeksi gonococcal** yang tidak rumit dari leher rahim, CDC merekomendasi :

- Ceftriaxone 250 mg diberikan secara intramuskular (IM) dalam satu dosis, PLUS
- Azitromisin 1 g PO dalam satu dosis (lebih disukai, karena ketahanan tetrasiklin) atau doxycycline 100 mg PO bid selama 7 hari

Atau, jika ceftriaxone bukan pilihan, rejimen berikut direkomendasikan:

- Rejimen cephalosporin suntik dosis tunggal, PLUS
- Azitromisin 1 g PO dalam satu dosis (lebih disukai) atau doxycycline 100 mg PO bid selama 7 hari

Infeksi Trichomonas, CDC merekomendasikan :

metronidazole 2 g PO dalam satu dosis atau tinidazole 2 g PO dalam satu dosis Atau, tawaran PO metronidazole 500 mg selama 7 hari dapat diberikan.

- Pasien harus menghindari konsumsi alkohol selama perawatan dengan metronidazole atau tinidazole, serta selama 24 jam setelah selesai metronidazole atau 72 jam setelah selesai tinidazole.
- Antimikroba yang diterapkan secara topikal tidak sefektif dosis oral (misalnya, metronidazole) dan harus dihindari.

Wanita menyusui yang diberikan metronidazole harus menahan menyusui selama perawatan dan selama 12-24 jam setelah dosis terakhir.

Referensi

AAFP
MEDSCAPE
NCBI
Jurnal : VAGINITIS ; beyond the basics