

Viral Skin Infections

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Overview

- Varicella
- Herpes
- HPV
- Pox virus

VARICELLA - zoster virus aka Chickenpox

- This contagious infection is **spread by mucosal droplets**. Patients are infectious from 2 days before until 5 days after the onset of the rash.
- VZV remains dormant in sensory ganglia after the primary infection.
- Primary VZV is a more severe infection in adults than children.
- Complications include pneumonitis and secondary bacterial infection. The live attenuated vaccine prevents severe infection in children.

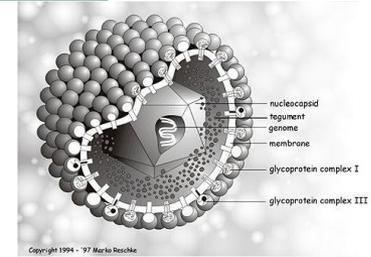
Look for..

- Malaise, cough, coryza, sore throat.
- A rash that affects the trunk more than the limbs or face.
- Crops of itchy erythematous macules and papules that evolve into vesicles (may also be oral). After 2 days, pustules that become crusted.
- Cropping that continues for 4–7 days.
- Healing, often with scarring, within 16 days.
- Haemorrhagic lesions in immunosuppressed patients (may be fatal).
- Respiratory symptoms in severe disease.

Treatment

- **Children with varicella (chickenpox)**
 - Symptomatic treatment with antipyretics, calamine lotion and tepid baths, provided immune system is normal.
- **Adults with varicella (chickenpox) and herpes zoster (shingles)**
 - Consider antivirals in patients presenting within 24–48h of new vesicles to speed up healing.
 - Treating patients >50 years with antivirals within 7 days onset of symptoms of shingles can ↓ duration of post-herpetic neuralgia.
 - Treatment options:
 - Aciclovir 800mg × 5/day, valaciclovir 1g × 3/day, or famciclovir 500mg × 3/day for 7 days.
 - Prescribe analgesia.
- **Immunocompromised or those at risk of severe disease**
 - Administer varicella zoster Ig within 96h of exposure.
 - Treat for 10–14 days starting with IV aciclovir 10mg/kg every 8h for 7 days. Seek advice about treatment in pregnancy.

Herpes

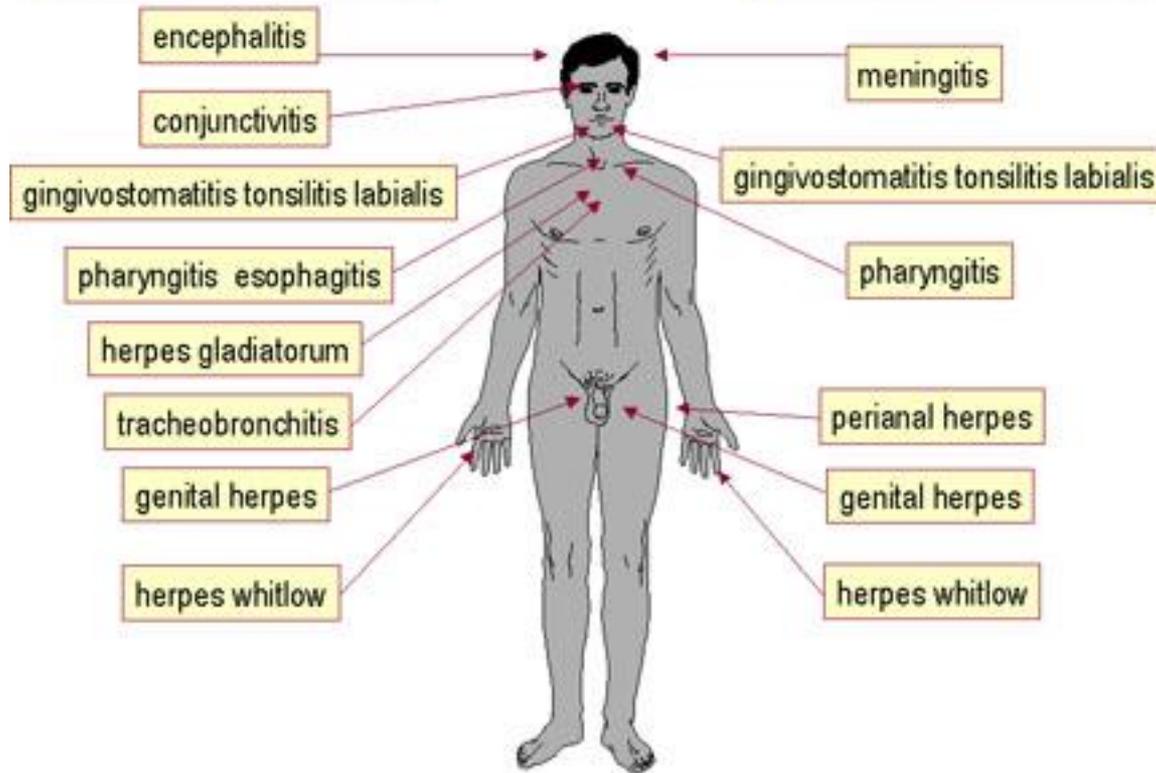


- The family of herpes viruses include:
 - HSV-1, herpes simplex virus type 2 (HSV-2), cytomegalovirus, Epstein Barr virus & human herpes viruses 6, 7 and 8.
 - HSV-1 causes skin infections & less often genital infection.
 - HSV-2 is the primary cause of genital herpes – an STD
- HSV is a common cause of contagious infections.
- Virus causes intraepidermal vesiculation & persists in sensory ganglia of individuals who have been infected.
- Lesions recur in the same site.

- Hallmark of herpes infection is the ability to infect epithelial mucosal cells or lymphocytes.
 - Virus then travels up peripheral nerves to a nucleated neurone where it may stay for years followed by reactivation.
 - A reddened area gives rise to a macula which crusts to form a papula.
 - The fluid in this blister is full of virus. As long as the virus is kept moist it can remain infectious
- Clinical presentation
 - It is often noted that HSV-1 causes infections above the waist and HSV-2 below the waist but this reflects the mode of transmission rather than any intrinsic property of the virus.

Herpes Simplex Virus 1

Herpes Simplex Virus 2



Clinical features

- Primary infections of HSV may be asymptomatic, but can cause a painful ulcerative gingivostomatitis (most often in children) that resolves in 10–14 days.
- Recurrent herpes labialis is caused by reactivation of the latent virus. A tingling, burning, or itching prodrome is common
 - **Primary Infections e.g. Gingivostomatitis:**
 - Malaise, headache, and fever; cervical lymphadenopathy.
 - Well-defined vesicles, 2mm in diameter, on dorsum of the tongue and the hard palate, but vesicles may be scattered over the entire oral mucosa.
 - Vesicles rupture rapidly to form very painful shallow ulcers with a yellowish-grey floor and erythematous margins.
 - Inflamed gingival margins.

Clinical features of genital HSV infections

- Genital infections are usually caused by HSV-2 and only occasionally by HSV-1. Primary attacks are more severe and long-lasting than subsequent attacks.
- Prevalence is highest in individuals adopting high-risk sexual behaviour, but viral carriage is often asymptomatic.
- Genital HSV increases the risk of acquiring and/or transmitting HIV.
- Look for:
 - Genital pain, itching, and/or burning.
 - Erythematous vesicles, but these rapidly rupture forming painful ulcers.
 - Dysuria leading to urinary retention.

Management of Cutaneous HSV infections

- Localized recurrent disease only requires symptomatic treatment.
- Prescribe oral antivirals in patients at risk of developing widespread infection, e.g. immunosuppressed, atopic eczema, Darier's disease—aciclovir, valaciclovir or famciclovir.

HPV

- Human papillomas virus (HPV) infects epithelial cells of skin and mucous membranes
 - >100 types of HPV have been identified & cause infections at different sites.
- HPV infections are **transmitted by direct contact**, which may be sexual, but incubation time ranges from weeks - >year.
- HPV DNA is widely distributed on the skin in the general population. Infection may be subclinical.
- **HPV-16 and -18 are linked to - development of anogenital and cervical SCCs.**
- **Certain HPV types may also play a part in development of some cutaneous SCCs.**
- Clinical types of HPV:
 - Anogenital or mucosal
 - Nongenital cutaneous

Look for..

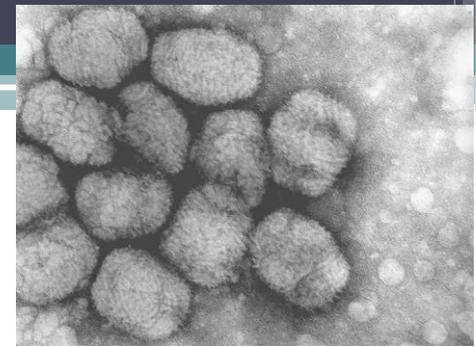


- **Common warts:**
 - Papules or nodules with a hyperkeratotic surface, often at sites of trauma e.g. fingers, elbows or knees.
 - Warts may coalesce into a plaque (mosaic warts).
 - Warts may be filiform (tiny frond-like projections) often around mouth. Subungual warts lift the nail plate from nail bed.
- **Plane (flat) warts:**
 - Flat-topped skin-coloured papules that are more apparent to the patient than the observer. (Side-lighting accentuates signs).
 - Plane warts are common on the face or other light exposed sites.
 - Common and plane warts may appear in lines where the skin has been scratched.
- **Deep plantar warts:**
 - These are most frequent on weight-bearing skin and may simulate corns
- **Anogenital warts:**
 - Perianal warts may be transmitted sexually or by autoinnoculation of cutaneous warts.
 - Genital infection manifests as a warty lesion on the genital or anal area, although these warts are often not initially recognized.
 - Cervical infection generally goes unnoticed and is discovered during cervical examination or Pap testing.

Treatment

- Most viral warts eventually disappear without treatment, but resolution may take time particularly in immunosuppressed or atopic patients.
- Immunostimulatory drugs such as oral retinoids or cimetidine have been advocated for widespread warts in adults (results varied).
- Anogenital warts: refer adults to a GU physician for screening for other STDs.
 - **Prevention:**
 - Women should have regular cervical smears.
 - **Immunisation with HPV vaccines:** Gardasil or Cervarix (FDA approved)
 - Routine vaccination of females aged 11-12 years of age with 3 doses of either HPV2 or HPV4
 - Routine vaccination with HPV4 for boys aged 11-12 years of age, as well as males aged 13-21 years of age who have not been vaccinated previously
 - Vaccination with HPV4 in males aged 9-26 years of age for prevention of genital warts; routine use not recommended

Pox Virus



- Is a dsDNA virus that can infect both humans and animals
- Virus replicates in cytoplasm
- 4 types of pox viruses may infect humans:
 - Orthopox, parapox, yatapox, molluscipox.
 - **Orthopox:** smallpox virus (variola), vaccinia virus, cowpox virus, monkeypox virus
 - **Parapox:** orf virus, pseudocowpox, bovine papular stomatitis virus
 - **Yatapox:** tanapox virus, yaba monkey tumor virus
 - **Molluscipox:** molluscum contagiosum virus (MCV)
- Pox viruses are usually spread by direct contact
 - In small pox - virus is found in lesions in URTI & can be transmitted to others in droplet secretions, and in skin lesions. Although the virus is considered to be highly contagious, this route of transmission makes its spread relatively slow

Look for..

- Poxvirus infections cause either a localized or a generalized vesicular exanthem.
- Lesions of smallpox, vaccinia, monkeypox & cowpox evolve from a papule to a vesicle.
- The vesicles then form pustules, followed by scabbing and healing.
- The remaining viruses cause localized nodules at the site of inoculation.
- Individual viruses cause characteristic clinical syndromes.
 - With the exception of smallpox, regional lymphadenopathy is common.

Treatment

- Smallpox infections have been eradicated worldwide.
 - Concern exists about reintroduction of smallpox through bioterrorism (!)
- Vaccinia vaccination only gives up to 10 yrs protection from small pox
 - Practice of vaccination with vaccinia virus began in the early 20th century.
 - Origins of vaccinia virus remain unknown, but this virus is distinct from both variola and cowpox (Jenner realised cowpox inferred immunity to smallpox hence vaccination).
- Curettage can be used to treat molluscum contagiosum but is usually ineffective in immunocompromised patients.
- Early recognition of poxvirus infection is essential to prevent inadvertent secondary spread.

THE END