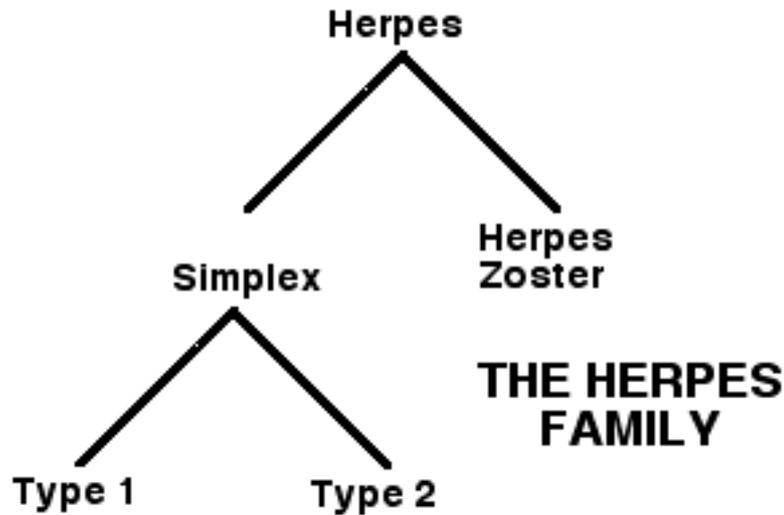


HERPES INFECTIONS

Year Two



HERPES SIMPLEX VIRUS

Herpes simplex is a virus that causes infections of moist membranes and skin. The most common areas affected are around the nose, lips, vulva, vagina and penis, but the skin anywhere on the body may be involved. The herpes virus is widely distributed in the community, and infections are very common.

The *Herpes simplex* virus comes in two main types, labelled simply 1 and 2. *Herpes simplex* 1 tends to cause infections around the nose and mouth (cold sores) and *Herpes simplex* 2 tends to cause genital infections, but they are interchangeable and not mutually exclusive. A distantly related virus, *Herpes zoster*, is responsible for shingles and chickenpox .

Specific antibody blood tests are available to detect the form of virus present, and its degree of activity. Smears from skin or mucus membrane lesions are a more accurate way of making the diagnosis.

Antiviral medications such as aciclovir, vidarabine and valaciclovir can be used to treat these infections.

HERPES SIMPLEX TYPE ONE

COLD SORE

Cold sores are a common skin infection, usually around the nose or mouth, caused by the virus *Herpes simplex* type 1.

Initially, the infection is caught as a child, when it is a simple mouth infection. The virus then migrates to the nerve endings around the lips and nose, and remains inactive there for many years. It may later reactivate at times of stress or illness to cause cold sores. It is passed from one person to another by direct contact (eg. kissing). 60% of the population are infected and remain carriers throughout their lives. Sores are uncommon before five years of age, and the incidence decreases in old age. Recurrences tend to develop at the same spot.

Active infection is characterised by redness and soreness of the affected area, followed a day or two later by an eruption of small blisters, which rapidly burst to leave a shallow, weeping,

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painful ulcer. In severe cases, there may be a mild fever, and the lymph nodes in the neck may become tender and enlarged. An additional bacterial infection is the only common complication. If necessary, the diagnosis can be confirmed by taking special swabs from the sore.

If treated by appropriate antiviral creams and lotions (eg. aciclovir, idoxuridine, penciclovir) immediately the redness and discomfort is felt and before the blisters form, it may be possible to stop further progress. Once the cold sore is established, a cure is not normally possible, but drying, antiseptic and anaesthetic creams or lotions may be used. Patients who are severely affected on a regular basis may use expensive acyclovir, valaciclovir or famciclovir tablets continuously to prevent infections.

The sore heals and the pain eases in about a week. Some patients have only one attack of cold sores in their lives, while others develop one every month or so. Over many years, most patients find that their attacks become less frequent.

HERPES SIMPLEX TYPE TWO

GENITAL HERPES

Genital herpes is a contagious viral infection of the genitals caused by the *Herpes simplex* type 2 virus, which is caught by sexual contact with someone who already has the disease. It is possible, but unlikely, for the virus to be caught in hot spa baths and from a shared wet towel. If sores are present, there is a good chance of passing the disease on, but a patient is also infectious for several days before a new crop of sores develop.



Condoms can give limited protection against spreading the disease. If a condom is worn, a woman can more easily pass the infection to a man than vice versa, and the overall risk is reduced by 75%. Normally it is easier for men to pass the infection to women.

Once a person is infected with the virus, it settles in the nerve endings around the vulva or penis, and remains there for the rest of that person's life. With stress, illness or reduced resistance, the virus starts reproducing and causes painful blisters and ulcers on the penis or scrotum in the male; and on the vulva (vaginal lips), and in the vagina and cervix of the female. The first attack may occur only a week, or up to some years, after the initial infection. An attack will last for two to four weeks and then subside, but after weeks, months or years, a further attack may occur. Women are affected more severely and frequently than men. The incidence of gynaecological cancer is increased in women with the infection and in rare cases it can cause encephalitis (brain infection).

If a baby catches the infection from the mother during delivery, it can cause encephalitis in the child. For this reason, if a woman has a history of repeated Herpes infections, she may be delivered by caesarean section.

The infection is diagnosed by taking a swab from an ulcer or a blood test.

Antiviral tablets (eg. valaciclovir, aciclovir, famciclovir) will control an attack, but must be started within 72 hours of its onset, or they can be taken regularly for months or years to prevent further attacks. Good control is possible with these medications.

A person taking antiviral medication long term to prevent attacks of genital herpes can still pass the infection on to a sexual partner, but the overall risk is reduced very significantly

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Without any treatment, the average time for attacks to stop coming is four years, but recurrences may still occur decades later at a time when the patient is stressed or has another illness that reduces overall resistance to infections.

HERPES ZOSTER VIRUS

Herpes zoster (HZ or *Varicella zoster*) is the virus responsible for the chickenpox infection, and subsequently may cause shingles.

CHICKENPOX

Chickenpox (varicella) is a generalised infection caused by the virus *Herpes zoster*. Infection occurs when the virus passes to another person from the fluid-filled blisters that cover the body of patients, or in their breath and saliva. Patients are infectious for a day or two before the spots appear, and remain infectious for about eight days. The incubation period is 10 to 21 days.

Early symptoms are similar to those of a cold, with a vague feeling of being unwell, headache, fever and sore throat. The rash usually starts on the head or chest as red pimples, then spreads onto the legs and arms, and develops into blisters before drying up and scabbing over. New spots may develop for three to five days, and it may be two weeks or more before the last spot disappears. The diagnosis can be confirmed by varicella antibody blood tests, but none are usually necessary.

Treatment involves bed and home rest until the patient feels well, and medications to relieve the itch (eg. calamine lotion, antihistamines), fever and headache. Children must be excluded from school for at least five days from the appearance of the first blisters and until all blisters have developed a dry scab.

Antivirals may be used to treat chickenpox, but are rarely used except in adults or the immunocompromised.

There is a vaccine has been available since 2000 to prevent the disease. One injection is necessary if given between 12 months and 12 years of age, but two injections six weeks apart in older children and adults.

Complications are more common in adults, and include chest infections and a type of meningitis. It is unusual for the pockmarks to scar unless a secondary bacterial infection occurs.

Complete recovery within ten days is normal. Once a person has had chickenpox, it is unlikely (but not impossible) that they will ever catch it again.

Once a patient has had chickenpox, the virus never leaves their body but migrates to the nerves along the spinal cord where it remains forever. The virus may be reactivated years later at times of stress to give the patient the painful rash of shingles.

SHINGLES

Shingles (varicella) is an infection of nerves and skin by the *Herpes zoster* virus, which is the same virus that causes chickenpox, and is usually caught as a child. The virus never leaves the body, but migrates to the roots of nerves along the spinal cord, where it remains inactive lifelong. At times of stress, the virus may reactivate and move along the nerve to cause the skin and other tissues to become very painful. Shingles is far more common in older people, and uncommon in children. You cannot catch shingles from another person, but a child who has not had chickenpox may catch this from a person who has active shingles.

HERPES INFECTIONS

An acutely tender blistering rash develops, often in a belt-like line on one side of the body, and even the slightest touch causes severe shooting pain. Any nerve may be affected, and it can occur on the abdomen or chest (most common sites), or on the face or legs. Occasionally the rash leaves permanent scars, particularly on the face. A small number of elderly people can develop chronic inflammation in the nerve, and pain that persists for years (post-herpetic neuralgia). The worst complication occurs if nerves around the eye and ear are involved, when dizziness, ear noises and rarely blindness may occur (Ramsay-Hunt syndrome).

No investigations are normally necessary, but if required the diagnosis can be confirmed by taking special swabs from a sore.

Shingles can be cured by specific antiviral tablets, but only if treatment is started within 72 hours of the rash first appearing. If treatment is neglected until after three days from the onset of the rash, the only treatment is painkillers, drying antiseptic lotions and mild sedatives. Steroids may be used in severe cases.

FOR THIS REASON, ANY PAINFUL RASH SHOULD BE CONSIDERED A MEDICAL EMERGENCY.

The rash dries out slowly and disappears over several weeks, usually healing completely. The pain is slower to disappear, and may last a month longer than the rash, but the vast majority of patients make an excellent recovery.

In 2008 a vaccine against shingles was introduced and is designed to be given to all people over 60 years of age, but at present expense is limiting its use.

RAMSAY-HUNT SYNDROME

The Ramsay-Hunt syndrome is the infection of a facial nerve with the virus *Herpes zoster*, which also causes chickenpox and shingles.

Shingles may affect any nerve leading out from the brain or spinal cord, but if the nerve affected (the geniculate ganglion) is the one supplying the ear and face, the patient will develop this syndrome.

It causes severe earache, dizziness, and a painful blistering rash across the upper face and ear. No investigations are normally necessary, but if required the diagnosis can be confirmed by taking special swabs from a sore.

Antiviral medication (eg. aciclovir, valaciclovir) must be taken as soon as the syndrome starts to prevent its spread. Steroids may also be used to reduce complications, but permanent deafness and dizziness can result if treatment starts too late.

It is named after the American neurologist James Ramsay-Hunt (1872-1937).

ANTIVIRALS

Until recently, drugs that killed viruses and cured viral infections (antivirals) were limited to the idoxuridine eye drops and ointments used for cold sores and *Herpes simplex* infections. Idoxuridine is far more effective if used early in the disease when the virus is multiplying.

Aciclovir (Zovirax) was the first antiviral cream/tablet/injection that could attack viral infections from within the body, but it (and the newer famciclovir, penciclovir and valaciclovir) only acts against *Herpes zoster* and *Herpes simplex* viruses that cause cold sores, genital herpes and shingles. Vidarabine is used to treat *Herpes simplex* infections of the eye.

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ACICLOVIR

Aciclovir (acyclovir or Zovirax) is an antiviral medication used to treat and prevent genital herpes, shingles, cold sores, chickenpox and *Herpes* eye infections. It is available as a tablet, cream, eye ointment and injection.

It should be used in pregnancy and breastfeeding only when medically essential but may be used in children. Lower doses are necessary in the elderly. The tablets should be used with caution in patients with serious kidney disease, dehydration and brain disorders. It is a very safe and effective medication that has a very high success rate in treating *Herpes* infections and minimal side effects. It may interact with probenecid, diuretics (fluid tablets), interferon and methotrexate.

Chickenpox and shingles are caused by *Herpes zoster*, and cold sores and genital herpes by *Herpes simplex*. It is vital that any patient who suspects they have shingles must see their doctor immediately as aciclovir only works if started within 72 hours of onset of the rash. Chickenpox and cold sores are normally only treated under special circumstances as the medication is quite expensive. Eye infections with *Herpes* may cause blindness if not treated rapidly and effectively. The cream is effective against cold sores only if started as soon as symptoms appear.

FAMCICLOVIR

Famciclovir (Famvir) is an antiviral medication in tablet form used for the treatment and prevention of genital herpes, and the treatment of shingles. It should be used with caution in pregnancy, breastfeeding, children and serious kidney disease.

The most common side effect is headache, while unusual ones include nausea and fatigue. It may interact with probenecid and diuretics (fluid tablets). Usually an overdose only results in an exacerbation of side effects.

Introduced in 1996, it is a very safe and effective medication that has a very high success rate in treating *Herpes* infections. Chickenpox and shingles are caused by *Herpes zoster*, and cold sores and genital herpes by *Herpes simplex*. It is vital that any patient who suspects they have shingles must see their doctor immediately as this medication only works if started within 72 hours of onset of rash.

VALACICLOVIR

Valaciclovir (Valtrex) is a very effective antiviral medication that was introduced in 1997. It is used as a tablet to treat shingles, genital herpes or *Herpes* infection of the eye. The medication must be started within 72 hours of the first sign of rash or infection.

It may be used with care in pregnancy, breastfeeding and children. Use valaciclovir with caution in dehydration, significant kidney and liver disease or if suffering from immunosuppression. The side effects are minimal but occasionally it may cause a headache and nausea. Interactions are possible with diuretics, probenecid, cimetidine and cyclosporin.

UNCOMMON *HERPES* INFECTIONS

CONGENITAL VARICELLA SYNDROME

A severe viral infection of a pregnant woman and her unborn child between 13 and 20 weeks of pregnancy by the *Varicella (Herpes) zoster* (chickenpox) virus causes the congenital varicella syndrome. The syndrome affects the baby, not the mother, and causes thick scars on the skin, intellectual disability from wasting of the brain, paralysis of varied muscles of the face and elsewhere, eye abnormalities, Horner syndrome (drooping eyelid, contracted pupil, a sunken eye and reduced sweating), wasting of limbs and spinal curvature. There is also a significant risk of foetal death before birth.

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It is diagnosed before birth by an ultrasound scan, chorionic biopsy (taking a sample of the placenta) and amniocentesis (putting a needle into the fluid around the baby).

Aciclovir is being used in pregnant women with chickenpox to prevent this complication. It may be prevented by the chickenpox vaccine. No treatment is available for the child after birth other than correction of deformities if possible.

ECZEMA HERPETICUM

A widespread viral skin infection with the *Herpes simplex* virus (which is also responsible for cold sores) may be referred to as eczema herpeticum. It usually occurs in people with reduced immunity and pre-existing eczema.

The symptoms are widespread itchy crusting skin blisters mainly affecting the face, fever, tiredness and irritability. Effectively, these people have hundreds of cold sores spread all over their face and body. The sores may be infected by bacteria, and the Herpes infection may involve the eyes causing damage to the cornea (eye surface). The diagnosis is confirmed by testing swabs from a skin sore for the virus.

Aciclovir or similar antiviral medications should be started immediately the diagnosis is suspected. The underlying eczema must also be treated as well as any secondary bacterial infections. Untreated the condition may persist for six weeks or so. If antiviral treatment is started soon enough, the duration of the viral infection will be dramatically reduced.

HERPETIC EYE ULCER

Ulceration of the cornea, the transparent outside covering on the front of the eye, may be caused by injuries to the surface of the eye (eg. scratch), or infections. *Herpes simplex*, the virus that causes cold sores and genital herpes, is the most common cause of all eye ulcers.

Pain and watering occurs in the eye, there is redness of the whites of the eye, and a discharge of sticky pus occurs if an infection is responsible. Permanent scarring of the cornea and reduced vision may occur if the ulcer is left untreated. A swab may be taken from the eye to identify the organism responsible for an infection.

Serious *Herpes* virus infections can be treated with antiviral eye drops and ointment, and through a microscope, minor surgery to remove the active viral areas at the edge of the ulcer may be undertaken. If necessary, a scarred cornea can be surgically replaced by a corneal transplant.

WHITLOW

A whitlow (*Herpes simplex* type 1 infection) is a skin infection beside a finger nail, caused by the virus *Herpes simplex* type 1. Initially, the infection is caught as a child, when it is a simple lip or mouth infection. The virus then migrates to the nerve endings around the finger or toe nail due to sucking of the finger or toe, and remains inactive there for many years. It may later reactivate at times of stress or illness. Recurrences tend to develop at the same spot.

Redness and soreness of the skin occurs, usually besides a nail, followed a day or two later by an eruption of small blisters, which rapidly burst to leave a shallow, weeping, painful ulcer. In rare cases, the infection can spread into the throat and lungs, and these patients become extremely ill.

If treated by appropriate antiviral tablets, creams or lotions immediately the redness and discomfort is felt and before the blisters form, it may be possible to stop further progress. Once established, a cure is not normally possible, but drying, antiseptic and anaesthetic creams or lotions may be used. The sore heals and the pain eases in about ten days.

CURIOSITIES

The word Herpes is derived from the Greek word for creep. Thus herpetology is the scientific study of snakes and other creepy reptiles.

The term shingles is derived from the Greek word for belt (cingulum) because the rash often appears as a belt half way around the body.

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TOTALLY, COMPLETELY AND UTTERLY USELESS INFORMATION

In the eighteenth century, it was believed that the pain and discomfort of shingles could be eased by washing the sores with breast milk.

Assoc. Prof. Warwick Carter