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Chickenpox Fact Sheet

Introduction

Chickenpox is a highly communicable viral disease caused by human (alpha) herpesvirus 3 (varicella-zoster virus, VZV), a member of the Herpesvirus group.

Clinical manifestations

The disease is usually mild, and not life threatening in otherwise healthy children, but can be more serious in newborn babies and in adults.

Chickenpox is characterized by sudden onset of slight fever, feeling of tiredness and weakness. These symptoms are followed by an itchy, vesicular rash, usually starting on the scalp and face. The rash usually begins as small lumps that turn into blisters and will dry, crust over and form scabs eventually. Vesicles are more abundant on covered than the exposed parts of the body. Lesions may appear on the scalp, high in the axilla, on mucous membranes of the mouth, upper respiratory tract and on the conjunctiva. Lesions tend to appear more abundant on covered than on exposed parts of the body.

Complications are rare but serious. Such complications are; pneumonia especially in adults, secondary skin sepsis, septicaemia and encephalitis leading sometime to persistent sequelae and death. A secondary bacterial infection can result in a disfiguring scar. Possible complications in pregnancy include premature birth and congenital varicella syndrome.

Though chickenpox is mostly a mild disorder in childhood, some people are at risk of serious complications from chickenpox.

- The unborn foetus of a pregnant woman who develops chickenpox
- neonates
- Any person with a weakened immune system, including people with cancer, organ transplant patients, and HIV
- Any person who acquires chickenpox as an adult

Following chickenpox infection the virus may remain latent in neural ganglia and upon subsequent reactivation virus may cause zoster (shingles) in 10-20% of the cases.

Mode of Transmission

Chickenpox is a highly contagious disease. It is transmitted from person to person by direct contact (touching the rash), droplet or air born spread (coughing and sneezing) of vesicle fluid or secretions of the respiratory tract of cases or of vesicle fluid of patients with herpes Zoster. It could also transmit indirectly through articles freshly soiled by discharges from vesicles and mucous membranes of infected people.

Incubation Period

Incubation period is 2-3 weeks; therefore, it takes 2-3 weeks to develop symptoms after being exposed to a person with chickenpox. Usually 14-16 days. Secondary attack rate may reach up to 90% among susceptible household contacts.

Period of communicability

A person can spread chickenpox from 1 to 2 days before the rash appears until all the blisters have formed crusts (It usually takes about 7-10 days for all crusts to disappear).

Immune Response

Natural infection induces lifelong immunity to clinical varicella in almost all immunocompetent persons. Newborn babies of immune mothers are protected by passively transmitted antibodies during their first few months of life.

Treatment

Chicken pox infection usually resolves without any treatment. However, when there are complications medical advice is needed.

Several things can be done at home to help relieve chickenpox symptoms. Keep finger nails of patients trimmed short to avoid scratching of blisters leading to cause infection. Calamine lotion may help relieve itching to some extent. Aspirin or aspirin-containing products should not be taken to relieve fever. Use of aspirin in children with chickenpox has been associated with development of Reye's syndrome. Non-aspirin medications such as acetaminophen may be used.

Acyclovir is now being widely used for the treatment of chickenpox. It has been demonstrated that treatment with Acyclovir may reduce the severity of the symptoms or duration of symptoms. Recommended dosage: by mouth, ADULT 800 mg 4–5 times daily for 5–7 days; **CHILD** under 2 years 200 mg 4 times daily, 2–5 years 400 mg 4 times daily, over 6 years 800 mg 4 times daily. For treatment of herpes zoster, *by mouth*, **ADULT** 800 mg 5 times daily for 7–10 days.

Prevention

1) Immunization

1.1) Pre exposure immunization:-

A live attenuated Varicella virus vaccine is available. A single 0.5 ml SC dose is recommended for 12 month to 12 year olds who have not had chickenpox. Persons 13 years of age and older who have not had chickenpox and are at high risk for exposure also could be immunized with chickenpox vaccine. One dose of vaccine is considered sufficient in some countries while two doses are used in others.

Varicella vaccine could be given at separate sites and with separate syringes simultaneously with other vaccines. Simultaneous immunization with other vaccine in different sites is safe and immunogenic as when the vaccines are given at intervals of several weeks.

1.2) Post exposure immunization:-

It is very difficult to prevent an outbreak once a case has occurred in a susceptible population. However,

- Injection of varicella zoster immune globulin within three days of exposure can cause temporary protection of the non immune individuals. It could prevent or modify diseases in close contacts. Premature infants, immunocompromised persons, or pregnant women may need a varicella-zoster immune globulin.
- Persons of any age who have never had chickenpox may receive varicella vaccine within 3 to 5 days of exposure. If a person receives chicken pox vaccine within 3 days of being in contact with chicken pox, it may prevent or modify disease among the contact.

2) Anti viral drugs

Use of antiherpes medicines during early incubation period to prevent Chickenpox is still debatable. However there are publications to indicate that use of Acyclovir is effective in prevention or reducing the severity of the symptoms and duration of symptoms if administered during early incubation period.

3) Isolation and quarantine of cases and contacts:-

Cases of chicken pox could be isolated until the vesicles become dry and crusted. Persons with chickenpox should not attend school, work and avoid any other public place until the blisters are dry and crusted. Contacts should be quarantined for the period of communicability (preferably 2 weeks).

4) Concurrent disinfection

Articles contaminated with discharges from the nose and throat of the patients should be disinfected.

5) Management of cases and contacts

- Immunization of cases and contacts may help to prevent or modify infection.
- All cases and contacts should be isolated during the period of communicability.

6) Investigation of contacts and source of infection

All cases of chicken pox should be investigated by the MOH and his team. This should be followed by isolation of contacts and quarantine where necessary.

References

World Health Organization – position paper, Chickenpox vaccine; Weekly epidemiological record. 1998, 73 :241-248.

Heymann L D 2004, Chickenpox control of communicable diseases manual, 18th edition; pg