

Public Health Significance of Chickenpox in India

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Abstract

Although chickenpox is a mild disease of childhood, but it is a highly contagious disease spread through droplet infection. As the secondary attack rate is more than 90%. Hence, the susceptible population is more prone to infection, especially in schools, colleges and overcrowded areas. Sometimes, mild disease becomes severe when it occurs in pregnant women, newborn and immune-compromised. Chickenpox leads to congenital varicella syndrome and more serious threat to the newborn. Healthy children do not require hospitalization, but when the patient is an immuno-compromised status and then hospitalization is required. Option for vaccination of chickenpox, there are a divided views, some say not vaccinate children, the logic behind is, if we postponed the infection to the higher age group, then the disease becomes serious. However, some have the view that vaccination can be the parent consultation. Public health experts should address this problem seriously, when this disease is in endemic and epidemic forms. School absenteeism is very common among children because of this infection. Serious consequences to the immune-compromised population a newborn may have some sequelae. For this disease, surveillance system should be strengthened to know the magnitude of the problem and its consequences.

Key words: Absenteeism, Chickenpox, Epidemics, Pregnancy

INTRODUCTION

Chickenpox is as old as smallpox and found in the human being. Man is the only reservoir. It occurs all over the world and may affect almost everybody, but occurs primarily in children under 10 years, although adults who are not immune can contract this disease. In tropical countries, it is more a disease of young adults. At these age groups, this disease becomes severe as compared to childhood when it results from a mild type. Epidemiology of chickenpox appears to be changing. There has been an unexplained upward shift in the age distribution of cases over the last 20 years.¹ Reactivation of the latent virus causes Herpes zoster.

MAIN BODY

Chickenpox is found both in endemic and epidemic forms in India. Chickenpox is relatively mild in healthy

children, but life threatening in immuno-compromised population such as children, pregnant women and newborn are more susceptible. It is highly contagious and spread through droplet infections. Cases of chickenpox are found throughout the year. However, their number is more during the transition from winter to summer, especially after the rainy season. As it is a highly contagious disease with a secondary high rate of over 90%. Hence, crowded localities hardest hit.^{2,3} Therefore, chances of disease transmission are more in school, colleges, urban slum areas, etc. A single attack confers of life long immunity. In a persons' who had chickenpox, the virus can cause shingles when the cell mediated immunity wanes off with age or following immune suppressive therapy. The virus may reactivate resulting in zoster later in life.⁴

Chickenpox seldom lasts for more than 2 weeks, from the appearance of the first rash to the disappearance of the last one.⁵ Chances of spread of this disease are of major importance; hence at one time a number of cases are more than one in a particular area. Isolation of chickenpox case for about 6 days or after the onset of rash and disinfection of soiled articles, nose and throat discharges. The virus tends to dies before the pustular stage; hence, scabs of the chickenpox are not infective.⁶

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Chickenpox is highly contagious. The period of communicability of patients with varicella is estimated to range from 1 to 2 days before the appearance of rash and 4-5 days thereafter. Infection during pregnancy poses a threat to the fetus and neonates. Congenital varicella syndrome develops among 2% of votes, where mothers had varicella in the first 20 weeks of pregnancy.⁷ when a pregnant woman contracts the disease within 5 days of delivery; there is a high risk of the newborn having serious disease. The virus can cross the placental barrier. Maternal infection in the first trimester can give rise to the congenital varicella syndrome. Maternal infection just prior to delivery may result in neonatal varicella, which carries a high mortality. Mortality rates in normal young children are estimated to be >2/100,000. Mortality risk for adults is 15 times higher.⁸ A healthy person has not required hospitalization, the patient can be treated in the home, but if the patient has any complication then hospitalization is done. There is not any specific treatment for chickenpox. Only symptomatic treatment is essential. Antivirus treatment is not routinely recommended that this disease. Complications are more seen in immune-compromised patients. Complications are treated according to the symptoms. Secondary infection should be dealt with, especially pneumonia with antibiotics. Nonetheless, the reduction of the risk of disability and deaths is achieved only if manage the complications effectively.

As the disease is highly communicable, and hence such patient should be kept isolated from the other members of the family those are more prone to infection. Keep skin clean by frequent baths or, once the fever has subsided, showers. Children should not attend their classes during the communicability period, i.e. until rash crusts. Additional control measures are notified under IDSP. Isolation of patients for about days after onset concurrent disinfection of articles soiled with nose and throat secretions. Laboratory diagnosis of the chickenpox usually not required. However, Serology is used mainly for epidemiological survey.⁹

Chickenpox can be prevented by the varicella vaccine. Live attenuated varicella is made available. It is indicated against varicella in healthy subjects. From age 12 months-12 years, a single dose of 0.5 ml by subcutaneous route from 13 years and above 2 doses of with an interval of 6-10 weeks are paid. It is contraindicated in pregnant women. Varicella vaccine has not been introduced into the national immunization schedule in the country. The vaccine is supposed to be very expensive, but the vaccine has proved safe and effective in preventing disease.¹⁰ However, the opinion of experts is divided about the need for a vaccine against chickenpox. Some consider that since chickenpox is a relatively mild illness, there is little need for a vaccine.

Further, it may be disastrous if chickenpox is postponed from childhood, when it is mild to adulthood when it is more severe. One of the major objections to a live vaccine is the capacity of the chickenpox virus to establish a latent infection. This may produce herpes zoster in later years more frequently or in a more severe form, than the natural disease.¹¹ Due to all these limitations, many of the public health experts do not consider the need for the vaccine. IAP has recommended varicella vaccine to children only after one to one discussion with parent.¹²

Passive immunization is recommended as post prophylaxis for immune compromised children, pregnant women and newborn exposed to maternal varicella. Close contact between a susceptible high risk patient and a patient with herpes zoster an indication of passive immunization as a prophylaxis.¹³ in previously immunized children, asymptomatic infection with mild type of virus may occur. When a child develops rash after 42 days of chickenpox vaccination and is due to the mild type of varicella – zoster virus, is known as breakthrough varicella. This breakthrough varicella should be isolated, since they are infectious.¹⁴ some experts think we need more epidemiological data on case fatality and complications and sequelae due to varicella in our country.

CONCLUSION

World is facing a triple burden disease problem. Experts are now talking about the non-communicable diseases. Along with there are many emerging and reemerging disease threats to the world. But certain disease is still present on the globe. Developing countries are still struggling with this disease like chickenpox is one which is still found in our country.

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