

## Editorial

### Chicken Pox

In 1977 when the last case of small pox was detected and treated in Bangladesh, the disease called small pox was eradicated from the earth's surface following an aggressive vaccination policy by the World Health Organization (WHO). But to-day the chicken pox still exists in Bangladesh in endemic form. It remains as a formidable infectious disease.

The infectious diseases do not get much weight age in common text book of medicine and are not given due importance in medical curriculum. In order to increase a general awareness amongst doctors and medical students, in this article are going to make a review of a highly contagious disease called chicken pox.

The name chicken pox is recorded and used since 1684<sup>23</sup>. The name is thought to be derived from chickpeas as the vesicles formed in course of the disease resemble chickpeas or chicken pecks. It is also suggested that the designation chicken stands for a child as the disease occurs mostly in children or from a corruption of itching-pox<sup>35</sup>. However, as Samuel Johnson puts it, the term chicken pox is preferred from its being of no very great danger. The disease is also known as varicella.

Chicken pox is a highly contagious disease caused by primary infection with Varicella- Zoster Virus (VZV), a member of the herpes virus family. The same virus causes herpes zoster (Shingles) in adults. Primary varicella occurs in all countries of the world. In temperate countries Chicken pox is primarily a disease of children with seasonal variations. Most cases occurring during winter and spring, due to school contact. It is one of the classic diseases of childhood with the highest prevalence in the 4-10 year age group.

Chicken pox occurs after exposure to VZV virus. It can cause problem for pregnant women, newborns, teens and adults and people who have immune system problems. Exposure to VZV in a healthy child initiates the production of host immunoglobulin G (IG), immunoglobulin M (IgM) and immunoglobulin A (Ig

A) antibodies IG antibodies persist for life and confer immunity. After primary infection VZV spread from mucosal and epidermal lesions to local sensory nerves. VZV then remains latent in the dorsal ganglion cells of the sensory nerves. Reactivation occur decades after and results in the clinically distinct syndrome of herpes zoster<sup>11</sup>.

Varicella infection in pregnancy could lead to viral transmission via placenta and infection of the fetus. If infection occurs during the first 28 weeks of gestation, this can lead to fetal varicella syndrome or congenital varicella syndrome<sup>15</sup>. During pregnancy, the dangers to the fetus are greater in the first six months. In the third trimester the mother is more likely to suffer from the adverse effects of infection<sup>9</sup>. For pregnant women antibodies produced as a result of immunization or previous infection are transferred via placenta to the fetus<sup>13</sup>. Effects on the fetus can range in severity from underdeveloped toes and fingers to severe anal and bladder malformation. Fourteen to 21 days after exposure a brief prodromal illness of low grade fever, along with headache, malaise, nausea and loss of appetite is followed by appearance of rash. In children the illness is not usually preceded by prodromal symptoms. The first sign is the rash or spots in the oral cavity. The rash begins as small red dots on the face, scalp, torso, upper arms and legs progressing over 10-12 hours to small bumps, blisters and pustules followed by umbilication and the formation of scabs<sup>6-7</sup>. At the blister stage, intense itching is usually present. Blister may also occur at the palms, soles and genital area.

Common visible evidence appear in the oral cavity and tonsil areas in the form of small ulcer which can be painful or itchy or both. This internal rash (enanthem) can precede the external rash (exanthem) by 1 to 3 days or may be concurrent. Adults may have more extensive rash and longer period of fever and they are most likely to develop complications such as Varicella Pneumonia<sup>6</sup>. Infection is transmitted by the airborne route, the patient becomes infectious to others 12-24 hours before the rash

appears. One can get the infection from direct contact with the infected man when he sneezes, coughs or shares food and drinks. One can also get the infection if he happens to touch the fluid from a chicken pox blister. The patient remains a source of infection until all the blisters have crusted over.

Patient's nasal discharge contain live virus. The nasal discharge may be the earliest symptom to develop before appearance of rashes. Therefore, the person become contagious one or two days prior to recognition of the disease. Contagiousness persists until all vesicular lesions have become dry crusts. This takes about 5 days. Chicken pox is rarely fatal. It is more severe in adult men than in women or children.

The most common late complication of chicken pox is shingles (herpes zoster) caused by reactivation of the varicella zoster virus even decades after the initial childhood chicken pox infection. Arterial Ischemic Stroke (AIS)<sup>8</sup> is associated with previous suffering from chicken pox.

The diagnosis of chicken pox is primarily clinical. There is particularly no useful diagnostic test or laboratory facilities available. Supportive evidence can be obtained by examination of fluid of the vesicles or from blood examination for the evidence of an acute immunological

response. Blood test can be used to identify a response to acute infection (IgM) or previous infection and subsequent immunity (IgG)<sup>9</sup>.

Prenatal diagnosis of fetal varicella infection can be performed using Ultrasound though a delay of 5 weeks following primary maternal infection is advised. A PCR (DNA) of the mother's amniotic fluid can also be performed though the risk of spontaneous abortion due to the amniocentesis procedure is higher than the risk of the baby developing fetal varicella syndrome<sup>10</sup>.

Affected individuals should be isolated to prevent contact with others e.g. in hostels and boarding school. Spread is prevented by taking hygienic measures, contagion is by exposure to respiratory droplets or direct contact with lesions within the period lasting from three days prior to the onset of rash, to four days after the onset of the rash<sup>25</sup>. The chicken Pox virus is susceptible to disinfectants, notably Chlorine bleach (i.e. sodium hypochlorite) Also, like all enveloped viruses, it is sensitive to desiccations, heat and detergents.

There is no completely satisfactory and effective vaccine like that of other infections. A varicella vaccine was first developed by Michiaki Takahashi in 1974 derived from the Oka strain. The chicken pox vaccine is not part of the routine childhood vaccination schedule.

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