

# **Pneumonia (Human Pneumonia)**

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## **Pneumonia**

Pneumonia is an inflammation of a lung. It commonly occurs in all age groups. It is leading cause of death among the elderly and people who have chronic illnesses. The causes include infection with bacteria, viruses, fungi or parasites. The causes for an infectious pneumonia are microorganisms that invade the lungs. Viral pneumonia is generally caused by viruses, such as influenza virus, respiratory syncytial virus (RSV), and others. The most common causes of bacterial pneumonia are streptococcus pneumoniae, Gram-positive bacteria and atypical bacteria. Bacteria have no problems to travel from an infected lung to the bloodstream, which causes serious or fatal illness.

## **Signs and Symptoms**

Coughing and difficulty of breathing are of its common characteristics. People with infectious pneumonia have a kind of greenish sputum, some may cough up blood. In some cases, people can have sweaty skin. Fever and muscle aches may also occur. Loss of appetite, fatigue, nausea, blueness of skin and vomiting are other possible symptoms. In elderly people it may cause unsteadiness, a tendency to fall. Infants with Pneumonia may have many such symptoms. At some instances, they may be sleepy or have no appetite.

## **Diagnosis**

Any such symptoms need immediate medical attention and physical examination of the lung. A health care provider can find out fever or some times, low body temperature and blood pressure, increased respiratory rate, high heart rate. Further investigation, such as chest x-ray and blood test are helpful, are often done to confirm the diagnosis. In resource poor communities; however, the general practice to diagnose pneumonia is usually carried with symptoms and physical examination. With some people who have other illnesses, it is difficult to diagnose pneumonia.

## **Transmission**

A typical pneumonia is contagious. It can be spread by respiratory droplets. Any person can contaminate another one at the time he coughs or spits. By direct contact with infectious secretions, a person-to person transmission may occur. Most cases of pneumonia among children crop up periodically, not in full outbreaks.

## **Prevalence and Trend**

As of February 2009, the UN Office for Humanitarian had announced that Pneumonia and other lung infections are the most deadly killers of children worldwide, even worst than AIDS, Malarial and Measles combined. The World Health Organization (WHO) estimates two million deaths per year caused by Pneumonia; one in three newborn infants also dies of Pneumonia. In countries that lack medial equipment and staff, it is often treated by antibiotics, rather blindly.

The Center for Disease Control and Prevention (CDC) has estimated that nearly 75% of Pneumonia deaths occur among infants under 1 year old. Further more, an estimate of 5-10% of all children under the age of 5 in developing countries get Pneumonia each year.

Studies show that there has been some decrease in the number of pneumonia deaths over the last decade due to the widespread use of antibiotics. However, it is unknown if the rate of Pneumonia among children in developing countries is changing.

### **Pneumonia and HIV/AIDS**

In 2007, UNAIDS has documented that 80% of the approximately 2.1 million children infected with HIV type 1 develop respiratory illness. As WHO defines it, the prevalence of HIV-1 infection among African children admitted for severe pneumonia ranges from 55% to 65%. Pneumonia in infants, caused by *Pneumocystis jiroveci*, is the first indicator for the prevalence of HIV and hence testing - adding in the administration of an early antiretroviral treatment.

In the United States, bacterial pneumonia and Pneumocystis pneumonia (PCP) are the two most common HIV-associated pneumonias.

The risk of Pneumonia increases with malnutrition, malaria, and suppressed immunity. The burden of pneumonia among children with HIV infection is high.

One of the major interventions employed to reduce pneumonia-associated morbidity and mortality among HIV-infected children demands preventative strategies. Common immunizations against *Streptococcus pneumoniae*, *Haemophilus influenzae* and varicella are considered to be effective in children living with HIV.

Nevertheless the overall incidence of opportunistic infections has decreased with the advent of highly active antiretroviral therapy (HAART) in 1996. HIV- related Pneumonias remains a major cause of illness.

Even with the widespread use of antiretroviral therapy, it is believed that Pneumococcal pneumonia continues to be more prevalent among HIV-positive individuals in the black community.

### **Prevention**

There are vaccines to protect some types of pneumonia. However, it depends on the type of pneumonia, health situation of a patient, appropriate treatment, and any other complications.

Infectious pneumonia can be prevented through many ways. Appropriate treatment of other underlying causes like HIV can minimize the risks of pneumonia. Avoiding smoking helps a lot to limit lung damage. Researches show that testing pregnant women for Group B Streptococcus and Chlamydia trachomatis and giving antibiotics can reduce pneumonia of newborns. Both in children and adults vaccination is important to prevent this disease. It is recommended that influenza vaccine should be given to the same individuals who receive vaccination against Streptococcus pneumonia.

WHO is playing a leading role in the prevention of Pneumonia. In August 2008, it approved the funding of Pneumococcus vaccine for 72 countries that qualified for assistance under the Global Alliance for Vaccines and Immunization (GAVI). The vaccine will be distributed by Wyeth Pharmaceuticals.

### **Treatment**

Most cases of pneumonia can be treated without hospitalization. Oral antibiotics, rest, fluid and home care can be effective treatments. However, with immuno-compromised individuals further treatment is usually required.

Other complications sometimes do occur as a result of pneumonia, often related to bacterial pneumonia, like respiratory and circulatory failures with lungs. The Global Alliance for Vaccines and Immunization (GAVI) plan of the World Health Organization (WHO) believes that an accurate pneumonia diagnostic and vaccination will be saving the lives of hundreds of thousands children every year.

### **Challenges**

The WHO document on vaccination notes that HIV-infected persons are at high risk of invasive pneumococcal disease. The protective efficacy of the vaccine in people who are living with HIV is currently under review. It further states that the use of the vaccine in children under two years of age and pregnant women to be controversial with further studies pending.

The Centre for Disease Control and Prevention makes it clear that the impact of the HIV epidemic in Africa and Asia is challenging. The challenges range from the wide spread of antibiotic resistance, the need of training to health workers, the assurance of antibiotic supply to identifying strategies.

Leading world health organizations are mobilizing financial resources to counteract this constraint. The UN Office for the Coordination of Humanitarian Affairs news media, IRIN, has recently announced the donation of US\$40 million dollar from the Bill & Melinda Gates Foundation to help improve screening Pneumococcal disease - the most common forms being

## Pneumonia and Meningitis.

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