

What is pneumonia or lower respiratory tract infection? Symptoms and treatment

What is pneumonia?

Pneumonia is the infection of the lungs which is apparent on imaging like X-ray or CT scan of chest. It is one of the commonest infections which affect human race. About 2.5 million people die of pneumonia every year across the world. Its incidence and mortality are high in young children, less than 5 years old or in elderly population.

Cause of pneumonia:

Pneumonia or lower respiratory tract infection (LRTI) can be caused by

1. Viruses
2. Bacteria
3. Fungi

Many viruses can cause pneumonia. Usually, it starts from upper respiratory tract infection (URTI) or throat infection. These viruses include influenza, parainfluenza, RSV and lately SARS-CoV2 causing COVID-19 among few other viruses.

Bacteria:

Few bacteria are common source of pneumonia though many other bacteria can cause pneumonia too. Common examples include pneumococcus, H. influenza, Mycoplasma, chlamydia and legionella.

Fungi:

Fungi are generally uncommon reason for pneumonia. The risk increases significantly in patient underlying immune dysfunction or organ transplant recipient.

Common symptoms:

Acute pneumonia usually presents with high grade fever, cough (which may be dry initially and productive of coloured mucus later), sharp chest pain, and breathlessness. It can be a cause of irritability in children and delirium or confusion in elderly. Not all symptoms are present in all patients. Some patients may have viral upper respiratory tract infection few days prior to development of pneumonia.

Examination findings:

Pulse rate is raised along with breathing rate in patients with pneumonia. Along with high fever, they may have low oxygen saturation in blood and low blood pressure. Advanced or severe pneumonia can present with many organ dysfunction, for example acute kidney failure which is important to manage.

What investigations are required:

Very mild pneumonia can be managed without any investigations sometimes but chest X-ray is recommended. In patients with moderate to severe pneumonia, along with chest imaging, blood tests and cultures are also needed.

Further investigations are dependent upon the presentation of each patient and underlying health issues. Bronchoscopy, which is camera examination of inside of lungs, is performed sometimes. If there is any fluid around the lungs (**pleural effusion**), we may need to take a sample or drain it completely.

Treatment of pneumonia:

Patients with mild pneumonia are usually treated with oral antibiotics in the community and they need follow up to ensure complete resolution.

Patients with moderate to severe pneumonia needs hospitalization for further investigations and management of complications. Depending upon the cause, usually these patients need strong intravenous antibiotics. If we suspect or confirm viral pneumonia due to influenza or SARS-CoV2, we may use special antiviral medication. Once the exact cause of pneumonia is known, we may switch to most appropriate antibiotic.

Patients with underlying immune deficiency or on immunosuppressants medication may develop fungal pneumonia which is very serious condition. We may treat these patients with antifungal medicines and try to address or minimise their immunosuppression.

Intensive care:

Patients with severe pneumonia who has low oxygen saturation, low blood pressures and effects on other body organs, require treatment in intensive care as their risk of death may be as high as 40-50%. These patients may require respiratory support with ventilator which can be provided in the ICU.

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