CHAPTER IV

PNEUMONIA

4.1 Pneumonia Infection:

Every day a person inhales large amounts of air, often loaded with germs, dust, and other parotids. The inhaled air is drawn deep into the lungs which are like two spongy air sacs in the chest where oxygen from the air is transferred to the blood. Naturally, the lungs are germ free and making it sterile by an array of natural defenses that protects the crucial organ from infection [46]. There are various mechanism by which the body prevents the infection. They are indicated below:

- By coughing deeply, the body expels germs and keeps germs trapping mucus from building up in the lungs.
- The vocal cords and the epiglottis, which is a flap of tissue that closes the trachea, a wind pipe when a person swallows. These, along with the gag reflex, keep people from inhaling food, vomit, or stomach acid into their lungs.
- The cilia which are small hairs that line the inside of the wind-pipe, waving upward. They filter particles out of the air before they reach the lungs.
- The immune system, a complex set of organs, chemicals, and white blood cells that attack germs that may enter the body.
These mechanisms usually prevent pneumonia, but sometimes a person's defenses may be weakened by illness, age, or other factors. So the person is expected to get the chance of infection. Sometimes, the germs or chemicals that cause pneumonia are aspirated or inhaled not from the air but from a person's own throat, as when germ-bearing food or vomit is breathed into the lungs [46]. This may cause aspiration pneumonia. Sometimes the germs are not inhaled at all but enter the lungs from the bloodstream [74].

![Infected Lungs](image)

**Fig. 4.1 Infected Lungs**

Pneumonia is an infection caused by bacteria, virus, fungi, parasites in the lungs. It is primarily known as Inflammation of the microscopic sacs in the lungs called alveoli which absorbs oxygen. It is a serious condition in which fluid or pus gets into the alveoli, blocking them and preventing oxygen from reaching the blood [45]. This lack of oxygen will make the affected person breathless and it will also render the body's organs starving for oxygen Thus the body's functionality is reduced, causing death. The other causes may be symptoms like fever, chillness, tiredness and pain in the chest.
4.2 Pneumonia affecting the Body:

The body filters the germs which is breathed through the lungs. This prevents the lungs from getting affected from diseases [44]. But sometimes the germs find way to enter into the lungs and can cause infection.

This is due to the following reasons:

- The immunity of the body is weak.
- The infecting germ is strong.
- While breathing the body fails to filter the germ out of the air.

When the germ that causes Pneumonia enters the body through the air and reaches the lungs, the alveoli gets inflamed and filled up with fluids called pus. This causes problem in breathing [46]. This breathing trouble is due to the little oxygen in the blood. It affects the body in two ways;

1. Lobar pneumonia that affects a lobe of a lung.
2. Bronchial pneumonia that affects patches throughout both lungs.
While Pneumonia can most commonly affect young and healthy people, it is very dangerous for old people and babies. It can even cause death when affecting people with other disease or weaken the immune system. It is typically caused by an infection but there are a number of other causes. Infectious agents include bacteria, viruses, fungi, and parasites.

4.3 Types of Pneumonia:

The following are the types of Pneumonia affecting the human body [47]:

- Bacteria Pneumonia
- Viral Pneumonia
- Fungal Pneumonia
- Parasites Pneumonia
- Chemical Pneumonia
4.4 Lung Affected with Pneumonia:

Pneumonia affected lungs naturally differs in color and texture. In the following image shows the natural lung area and the lung which is infected from infection [24].

![Fig. 4.5 Lungs showing the affected area](image-url)