

**Dr.Violeta Zanaj, M.Ph Arben Tusha, Klementina Vogli**

## **PNEUMONIA, NURSING CARE IN PATIENTS WITH PNEUMONIA**

### **Introduction**

Pneumonia is a disease of the respiratory system. It presents as an inflammatory process of lung parenchyma resulting in edema of the internal lung tissue and extravasation of alveolar fluid. Drawing on its anatomically constituent components it is also called pneumonia, eg lobar pneumonia, segmental to bilateral or bronchopneumonia. In general its etiological factors are bacteria to fungal viruses to non-infectious ones such as: inhalation of toxic gases, chemicals, smoking.

### **Purpose**

This article consists of knowing the features of this respiratory disease, how to recognize it and how to prevent its etiological factors before the disease appears and aggravates. To treat any person / patient affected by pneumonia based on anamnesis, diagnosis, therapeutic medical treatment. Provide health care to the nursing staff by making physical assessment, possible nursing diagnoses, planning, nursing interventions, in order to reduce the time for recovery. Teach and advise patients affected by pneumonia to correctly, accurately, and appropriately apply therapies and advice on avoiding its etiological factors.

### **Material & Method**

- 1.Perform the clinical signs of pneumonia and distinguish it with another respiratory disease.
2. Description and proper application of the five nursing stages to the patient.
- 3-Describe the correct imaging device for pneumonia.

4 - Information on people, patients, when it is most commonly affected by pneumonia.

**Keywords:** Respiratory Disease, Pneumonia, Imaging Diagnosis, Treatment, Evaluation, Nursing Intervention Diagnosis, Positive Feedback.

## **Pneumonia**

It is defined as an inflammatory process of lung parenchyma that occurs with an edema of internal lung tissue and extravasation of alveolar fluid, leading to hypoxemia. It is an infection that inflates the airways in one or both lungs. Air pus can be filled with fluid or pus (purulent material), causing coughs or phlegm, fever, chills and difficulty breathing. A variety of organisms, including bacteria, viruses and fungi, can cause pneumonia. Pneumonia can range from serious to mild to life threatening. The most serious ages for pneumonia are infants and young children, people older than 65, people with health problems or a weakened immune system.

## **Signs and symptoms of pneumonia**

They vary from mild to severe, depending on factors such as the type of germ that causes the infection, and your age and overall health. Mild signs and symptoms are often similar to those of a cold or flu, but they last longer. To distinguish whether or not one has pneumonia, based on the concerns that the patient has, then we draw on the characteristic symptoms that the disease exhibits.

## **Symptoms of pneumonia are:**

- 1- Chest pain when breathing or coughing.
- 2- Confusion or changes in mental awareness (in adults 65 and older).
- 3- Cough, which can produce phlegm.
- 4- fatigue.

- 5- High temperature.
- 6- Fever, sweating and chills.
- 7- Nausea, vomiting or diarrhea.
- 8- shortness of breath.

In infants, however, we need to be very careful and look at each symptom very carefully and analyze it precisely because newborns and infants may show no sign of infection. They may vomit, have fever and cough, appear restless or tired and without energy, or have difficulty breathing and lack of appetite.

You should see your doctor immediately if you have these symptoms listed above. Go to your doctor if you have difficulty breathing, chest pain, persistent fever of 102 F (39 C) or higher, or persistent cough, especially if you are coughing ulcer. It is very important that such people with these signs should go to their doctor and make the necessary visit.

It is especially important that people in these high-risk groups go to a doctor:

-

- 1- Adults older than 65 years.
- 2- Children younger than 2 years with signs and symptoms.
- 3- People with a basic health condition or weakened immune system.
- 4- People taking chemotherapy or taking medications that weaken the immune system.

For some older adults and people with heart failure or chronic lung problems, pneumonia can quickly become a life-threatening condition.

## **Causes**

Many germs can cause pneumonia. The most common are the bacteria and viruses in the air we breathe. Your body usually prevents these germs from infecting the lungs. But sometimes these germs can overwhelm your immune system if your health is generally good. Pneumonia is classified by the types of germs that cause it and where you got the infection.

## **Classifications of pneumonia**

### **A- Community-acquired pneumonia**

Community-acquired pneumonia is the most common type of pneumonia. Occurs outside hospitals or other health care institutions. It can be caused by:

1- bacteria. (The most common cause of bacterial pneumonia in the US is *Streptococcus pneumoniae*. This type of pneumonia can occur on its own or after you have a cold or flu. It can affect a part of the lung, a condition called lobar pneumonia. )

2- Bacteria-like organisms. (*Mycoplasma pneumoniae* can also cause pneumonia. It typically produces milder symptoms than other types of pneumonia. Walking pneumonia is an informal name given to this type of pneumonia, which is usually not severe enough to require bed rest.)

3- Fungi. (This type of pneumonia is more common in people with chronic health problems or a weakened immune system, and in people who have absorbed large doses of organisms. depending on geographical location.)

4- viruses. (Some of the viruses that can be cold and flu can pneumonia. Viruses are more common and pneumonia in children younger than 5 years. Viral pneumonia is clearly mild. But in some cases it can become very serious.)

### **B- Hospital acquired pneumonia**

Some people catch pneumonia during a hospital stay for another illness. Hospital-acquired pneumonia can be serious because the bacteria that cause it may be more resistant to antibiotics and because people who get it are already sick. Persons in breathing machines (blowers), often used in intensive care units, are at greater risk of this type of pneumonia

### **C- Aspiration pneumonia**

Aspiration pneumonia occurs when you inhale food, drink, vomit, or saliva in your lungs. Aspiration is more likely if something disturbs your normal dental reflex, such as brain damage or swallowing problem, or excessive use of alcohol or drugs.

### **D- Other very important causes of pneumonia are:**

- Chronic diseases,

- Age greater than 60 years,
- Organ transplant,
- Decrease in cerebral function,
- SIDA,
- Exposure to harmful gases,
- Abdominal or thoracic surgery,
- Overcrowded conditions.

### **Diagnosis of Pneumonia**

Your doctor will start by asking about your medical history and doing a physical exam, including listening to your lungs with a stethoscope to check for abnormal bubbles or cracking sounds that suggest pneumonia.

If pneumonia is suspected, your doctor may recommend the following:

1- Blood tests. Blood counts are used to confirm an infection and to try to identify the type of organism causing the infection. However, accurate identification is not always possible.

2 X-ray. Chest X-rays are a common type of examination. A chest X-ray is often one of the first procedures you will perform if your doctor suspects you have heart or lung disease. This helps your doctor diagnose pneumonia and determine the extent and location of the infection. It can also be used to control how you respond to treatment. This helps your doctor diagnose pneumonia and determine the extent and location of the infection. However, it cannot tell your doctor what kind of microbe the pneumonia causes.

3- Pulse oximetry. This measures the level of oxygen in your blood. Pneumonia can prevent your lungs from moving enough oxygen into your bloodstream.

4- Sputum test. A sample of fluid from your lungs (saliva) is taken after a deep cough and analyzed to help determine the cause of the infection. Your doctor may order one supplement if you are older than 65, in the hospital, or have serious symptoms or health conditions.

These may include:

A- CT scan. If your pneumonia is not clearing as fast as you expected, your doctor may recommend a chest scan to get a more detailed image of your lungs.

B- Culture of pleural fluid. A sample of fluid is obtained by placing a needle between your ribs from the pleural area and analyzed to help determine the type of infection.

### **Treatment**

Treatment for pneumonia includes healing the infection and preventing complications. Persons with community-acquired pneumonia can usually be treated at home with medication. Although most symptoms ease in a few days or weeks, feeling tired can persist for a month or more.

- Antibiotics.

These medicines are used to treat bacterial pneumonia. It may take time to identify the type of bacteria that causes your pneumonia and to choose the best antibiotic to treat it. If your symptoms do not improve, your doctor may recommend another antibiotic.

- Cough medicine.

This medicine can be used to calm your cough so that you can rest. Because coughing helps soothe and move fluid from your lungs. Furthermore, you should know that very few studies have looked at whether cough medicines reduce the cough caused by pneumonia.

- Reduces fever / pain relievers.

You can get these as needed for fever and discomfort. These include medicines such as aspirin, ibuprofen (Advil, Motrin IB, others) and acetaminophen (Tylenol, others).

### Hospitalization

You may need to be hospitalized if:

You are older than 65 years.

Juaj Your kidney function has declined.

Juaj Your systolic blood pressure is below 90 millimeter mercury (mm Hg) or your diastolic blood pressure is 60 mm Hg or below.

Juaj Your breathing is fast (30 breaths or more per minute).

You need help breathing.

Juaj Your temper is below normal.

Uaj Your heart rate is below 50 or above 100.

Children can be hospitalized if:

- They are younger than 2 months of age.
- They are lethargic or drowsy.
- They have trouble breathing.
- Have low levels of oxygen in the blood.They appear dehydrated.

These tips can help you recover faster and reduce the risk of complications:

- ❖ Make lots of rest.

Don't go back to school or work until you get back to normal and stop mucus coughing. Even when you start to feel better, be careful not to overdo it. Because pneumonia can recur, it is best not to jump back into your routine until you are fully recovered. Ask your doctor if you are not sure.

- ❖ Stay hydrated.

Drink plenty of fluids, especially water, to help release mucus to the lungs. Take your medicine as prescribed. Take the entire course of any medicine your doctor has prescribed for you. If you stop taking medication too soon, your lungs may continue to carry bacteria that can multiply and cause your pneumonia to recur.

### **What can you do?**

- Keep a record of your symptoms, including your temperature.
- Write down key medical information, including recent hospitalizations and any medical conditions you may have.
- Enter key personal information, including exposure to chemicals or toxins, or any recent travel.
- Make a list of all the medicines, vitamins and supplements you are taking, especially an antibiotic left over from a previous infection, as this can lead to drug-resistant pneumonia.
- Bring a family member or friend, if possible, to help you remember questions to ask and what your doctor said.
- Write questions to ask your doctor.

## **Complications**

Even with treatment, some people with pneumonia, especially those in high-risk groups, can suffer complications, including:

- o Bacteria in the bloodstream (bacteremia). Bacteria that enter the bloodstream from your lungs can spread the infection to other organs, thereby causing organ failure.
- o Difficulty breathing. If your pneumonia is severe or you have a chronic underlying lung disease, you may have trouble breathing in enough oxygen. You may need to be hospitalized and use a breathing machine while your lung is healing.
- o Fluid accumulation around the lungs (pleural effusion). Pneumonia can cause fluid to build up in the thin space between the layers of tissue that direct the lungs and the pleura (pleura). If the fluid gets infected, you may need to drain it through the chest tube or remove it with surgery.
- o Lung abscess. An abscess occurs if the eyebrow is formed in a cavity in the lung. An abscess is usually treated with antibiotics. Sometimes, surgery or drainage with a long needle or tube inserted into the abscess is necessary to remove the orb.

## **Prevention**

To help prevent pneumonia:

- Vaccination. Vaccines are available to prevent some types of pneumonia and influenza. Talk to your doctor about getting these shots. Vaccination guidelines have changed over time, so be sure to review your vaccination status with your doctor even if you remember first getting a pneumonia vaccine.
- Make sure children are vaccinated. Doctors recommend a different pneumonia vaccine for children younger than age 2 and for children ages 2 to 5 who are at particular risk of pneumococcal disease. Children who attend a group childcare center must also receive the vaccine. Doctors also recommend flu shots for children older than 6 months.



- Practice good hygiene. To protect yourself against respiratory infections that sometimes lead to pneumonia, wash your hands regularly or use an alcohol-based hand sanitizer.
- Don't smoke. Smoking damages the natural protection of your lungs against respiratory infections.
- Keep your immune system strong. Get enough sleep, exercise regularly, and consume a healthy diet.

## **Nursing Care for Pneumonia Patients:**

### **❖ Nursing Assessment**

The nurse begins and observes the general appearance of the patient. The patient may have bright eyes, anxiety, discomforting face, headache, redness. The patient complains of chest pain, discomfort, headache, fever, cough, dyspnoea, tachypnea. The nurse assesses the patient's breathing for rhythm, depth of inspiration, symmetry of arm movement. The nurse records the duration of the inspiration / expiration ratio between these two respiratory phases. Identifies if there is rapid pulse, tilt and hypotension with position changes in instantaneous modes. Measure patient temperature and see if it is high, which is a sign of bacterial pneumonia.

### **❖ Nursing diagnoses**

- Regulation of gas exchange related to capillary changes in the alveolar membrane.
- Blockage of the upper respiratory tract associated with increased tracheobronchial secretion.
- Pain related to the effects of inflammation.
- Regulation of thermoeregulation, hyperthermia associated with increased metabolic processes and dehydration.
- Deficit in high volume fluid volume.
- Disruption of comfort, sleep cycles related to pain, dyspnea.

### ❖ **Nursing interventions**

- Improving gas exchange.
- Airway cleansing.
- Provide rest and energy accumulation.
- Sufficient intake of liquids.
- Understanding treatment and preventive measures.

### ❖ **Improving gas exchange**

- The nurse instructs the patient to stand upright with the raised bed head to encourage easier breathing.
- It is recommended that the patient frequently shift positions to facilitate dispensing.
- The patient sits on the bedside with 2-3 pillows placed.
- The patient uses an elevated position when he has no place to sit.
- Learn to use breathing aids.
- Oxygen if needed immediately and cortisone (Prednisolut)

### ❖ **Cleaning the airways**

- It is encouraged to take a large amount of fluid 2-3 liters a day to dilute and soften pulmonary secretions and to replace fluids lost by the body as a result of temperature, dehydration and dyspnea.
- Ventilate well the room where the patient is lying down, be ventilated at an ambient temperature of 18-20 degrees.
- The patient is encouraged to cough.
- Perform chest physiotherapy as it helps to release and move the secretions.
- Patient drain for 10-20 minutes and is told to take a deep breath and cough.
- The patient is encouraged to cough and take deep breaths every 2 hours.
- Use oxygen as prescribed by the doctor, monitor the effect of oxygen and remove hypoxia.

### ❖ **Bed regime and energy accumulation**

- Patients are encouraged to stay in bed because it reduces lung function and facilitates ventilation.
- The patient is placed in an appropriate position, especially semi-fowler.
- Encourage the patient to constantly change position so that there is no accumulation of secretions in the lungs.
- The position is constantly changed to avoid decubitus.
- The nurse helps the patient design an easy daily schedule.

### ❖ **Providing the necessary fluid**

- It is recommended to take a large amount of 2-3 liters of fluid per day.
- Promote rehydration of the patient as a result of previous dehydration.
- It is recommended to stimulate the growth of orcas, the intake of liquid foods, in tea, lemonade, fruit juices, milk and is occasionally switched to those high-protein, calorie-rich vitamin foods.
- Increase the salt intake level by 6-10 grams per day in order to compensate for sweat losses during the acute period.

### ❖ **Health education of patients with pneumonia**

- Educate the patient about avoiding upper respiratory tract infections
- The patient is advised to avoid overcrowded areas, especially during the winter or in the winter, as viruses are circulating and spreading.
- Avoid contact with infected persons, exposure to irritants.
- Many patients are advised not to consume tobacco, since it destroys those which are the first line of defense elements of the lungs.
- The nurse advises the patient on a special diet and fluid intake.
- The nurse reminds the patient to tell the doctor immediately the temperature continues to be high, persistent cough, hemoptysis.
- Encourage patients to perform frequent coughing and deep breathing.

### ❖ **Assessment of achievements**

It will happen when a patient with pneumonia arrives to realize these elements after treatment:

- Ensures gas exchange,
- Ensures oxygen concentration in blood at normal level,
- Is able to think without confusion,
- Improves the airway,
- Demonstrates an efficient coughing room,
- Presents normal breathing sounds,
- Checks dispenser,
- Provides sufficient amount of liquids obtained,
- Provides self-care and other daily activities independently,

### ❖ **Conclusions**

The nurse manages to perform the 5-stage nursing in a patient with pneumonia. He / she manages to distinguish the characteristic signs of pneumonia and formulate his / her nursing diagnoses. Performs and applies treatment safely as prescribed by a physician. Advise the sick patient on what to do and not to do. It can detect at the end of the job if its service has received positive feedback.

### **Bibliography**

Taken from:

<https://www.lung.org/lung-health-and-diseases/lung-disease-lookup/pneumonia/symptoms-and-diagnosis.html>

<https://www.lung.org/lung-health-and-diseases/lung-disease-lookup/pneumonia/what-causes-pneumonia.html>

<https://www.lung.org/lung-health-and-diseases/lung-disease-lookup/pneumonia/symptoms-and-diagnosis.html>

<https://www.lung.org/lung-health-and-diseases/lung-disease-lookup/pneumonia/treatment-and-recovery.html>

<https://www.lung.org/lung-health-and-diseases/lung-disease-lookup/pneumonia/preventing-pneumonia.html>

<https://www.mayoclinic.org/diseases-conditions/pneumonia/diagnosis-treatment/drc-20354210>