**Ministry of Higher Education** 

&Scientific Research

AL-Qadisiya University

Science college

Section chemical



# Chronic Obstructive Pulmonary Disease when Kids in the months the first of age

# A RESERCH

# SUBMITTED TO THE DEPARTMENT OF EDUSATION AL-QADISYA UNVERSTY AS ABARTIAL FUAFILLMENT REQUIREMENT FOR Certificate THE BACHELOR OF SIENSE chemistry science

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بسمالل الرَّحْمُ الرَّحِيم ﴿ وَقُلْ اعْمَلُوا فُسَيَرَى اللَّهُ عَمَلُكُمْ



صدقاللهالعلى العظيم

سورة التوبة الآية (105)

﴿ الإهـــــداء)
إلى من جرع الكأس فارغا ليسقيني قطرة حب
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إلى مــــز الحب وبلسم الشفـــــاء
إلى القلب الناصع بالبياض والدتي الحبيبة

إلى القلوب الطاهرة الرقيقة والنفوس البريئة إلى رياحين حياتي إخوتي \* \*

إلى الأجساد التي سكنت تحت تراب الوطن الحبيب المعفرة بدماء الشهادة

الآن تفتح الأشرعة وترفع المرساة لتنطلق السفينة في عرض بحر واسع مظلم هو بحر الحياة وفي هذه الظلمة لا يضيء إلا قنديل الذكريات ذكريات الأخوة البعيدة إلى الذين أحببتهم وأحبوني أصدقائي

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إلى الذين بذلوا كل جهد وعطاء لكي أصل إلى هذه اللحظة أساتذتي الكرام ولا سيما الدكتور الفاصل (زينب نجم ) والدكتورة (اوراس عدنان حاتم) والست ( نوال خنطيل) \*\*

إليكم جميعا أهدى هذا العمل

(شکر وتقدیر 📎

الحمد لله الأول قبل كل شيء والأخر بعد فناء كل شيء، والحمد لله الذي هدانا لهذا وما كنا لنهتدي لولا أن هدانا الله والصلاة والسلام على رسوله الكريم محمد (صلى الله عليه واله وسلم). واني أحمد الله تعالى على عظيم فضله الذي مكنني من إنهاء هذه الدراسة ووفقني لانجاز هذا الجهد العلمي داعي الله إن يكون علماً نافعاً خالصاً لوجهه تعالى.

من الحق والوفاء وأنا أنتهي من إعداد هذه البحث ، أن أتقدم بأسمى آيات الشكر والتقدير والامتنان المعنى أستاذي الفاضال المحتور (زينب نجم)، لجهودها العلمية القيمة ورعايته المخلصة لانجاز هذه البحث وأرى من الوفاء أن أهدي شكري وتقديري إلى الأساتذة الأفاضل و رئيس وأعضاء لجنة المناقشة لقبولهم مناقشة البحث

ويلزمني الواجب أن ابدي خالص امتناني وعرفاني بالجميل إلى أساتذتي في كلية العلوم / جامعة القاحسية / لما قدموا من مجمود وتوصيات دلت في كلية العلوم / جامعة القاحسية / لما قدموا من مجمود وتوصيات دلت على دقة عملمو وكرو أخلاقمو وأتمنى لمو الموفقية والصحة الدائمة.

وشڪا وعذيرا لڪل من نساد قلمي ولمرينسه قلبي وفڪري من أصدقائي وزملائي وإخوتي أينما كانوا . . .

#### 1-1Chronic obstructive pulmonary disease

abbreviated as COPD of **C** Hronic **O** bstructive **P** ulmonary **D** isease) or as defined by the medical dictionary A chronic obstructive pulmonary disease, or chronic obstructive pulmonary disease (COPD), is a chronic disease characterized by chronic obstructive pulmonary disease, chronic airflow, and lung function. This deficiency is gradually exacerbated and is completely irreversible by means of expanded bronchodilators. . Smoking is the leading cause of the disease, which affects between 10-20% of those over the age of 40 and causes about 2.5 million deaths annually The main symptoms of the disease include shortness of breath, cough and sputum secretion. Most people with bronchitis develop chronic obstructive pulmonary disease.

Two chronic conditions are chronic bronchitis, a cough and phlegm for three months in two consecutive years, andemphysema, an anatomical diagnosis that describes a change in the structure of the lungs from the expansion of the airway and damage to the walls of the alveoli.

It is smoking tobacco that causes the most common chronic obstructive pulmonary disease, in addition to a number of other factors, such as air pollution and genetics that play a smaller role. In the developing world, other causes of the disease, such as cooking flares and poorly ventilated heating, are common sources of air pollution. The long-term exposure of these irritants causes an inflammatory response in the lungs which leads to narrowing in the small air passages and the decomposition of lung

tissue. This is known as **pulmonary emphysema**. Diagnosis is based on weak airflow which is measured by a lung function test. In contrast to asthma, We find that lack of airflow does not improve significantly with treatment.

Chronic obstructive pulmonary disease can be prevented by limiting exposure to known causes. This includes efforts to reduce smoking rates and improve indoor and outdoor air quality. Chronic obstructive pulmonary disease (COPD) treatments include: cessation of smoking , vaccination , pulmonary rehabilitation , inhalation of bronchodilator and steroids . Some people may benefit from long-term oxygen therapy or lung transplantation . <sup>[8]</sup> In patients with severe deterioration and exacerbation of the disease, there may be a need for increased use of medications and hospitalization.

Worldwide, chronic obstructive pulmonary disease affects 329 million people, or approximately 5% of the total population. In 2012, the disease ranked third in the list of leading causes of death, causing more than 3 million deaths. <sup>[10]</sup> The number of deaths is expected to increase due to high smoking rates and high population aging rates in many countries. <sup>[11]</sup> and resulted in an estimated economic cost of \$ 2.1 trillion in 2010. <sup>[12]</sup>



Video tutorial

# 1-2Symptoms

The most common symptoms of chronic obstructive pulmonary disease are sputum, dyspnea and cough . These symptoms persist for a long period of time usually worsen over time. It is unclear whether there are different types of chronic obstructive pulmonary disease. While previously divided into pulmonary blisters and chronic bronchitis, pulmonary emphysema is a description of lung changes only and not a disease itself, and chronic bronchitis is just a description of the symptoms that may or may not occur with chronic obstructive pulmonary disease.

# 1-3-Cough

Chronic cough is usually the first symptom of the disease. When it lasts more than three months a year for more than two years, accompanied by sputum secretion without further explanation, this is known as chronic bronchitis. This condition can occur before COPD develops fully. The amount of sputum produced can vary between hours and days. In some cases, the cough may not be present or occur only from time to time and may not be accompanied by phlegm. Some people with chronic obstructive pulmonary disease (COPD) attribute symptoms to "smoker's cough". Sputum may be swallowed or glued, often depending on social and cultural factors. Strong coughing can lead to rib fractures or brief loss of consciousness . People with chronic obstructive pulmonary disease have a history of long-term " colds".

#### 1-4- Shortness of breath

Breathlessness is a symptom that often bothers people more than others. It is commonly described as "breathing requires effort", and describes the sufferer as "I feel myself broken" or "I can not get enough air". In any case, different terms may be used in different cultures. Shortness of breath usually worsens when stress persists, continues for long periods, and worsens over time. In advanced stages, breathing distress occurs during rest and may be present continuously. Shortness of breath causes anxiety and poor quality of life for people with chronic obstructive pulmonary disease. Many people with advanced chronic obstructive pulmonary disease (COPD) breathe with liposuction, and this method of breathing may alleviate some people's breathlessness.

### 1-5- Other signs

In chronic obstructive pulmonary disease, exhalation may take longer than inhalation. Chest tightness may occur but this is not common and can be caused by another problem. Those suffering from difficulty in airflow may have hyperventilation or low sounds as the air enters the chest examination using a stethoscope. The brachial chest is a

distinguishing feature of chronic obstructive pulmonary disease, but relatively uncommon.

Advanced chronic obstructive pulmonary disease (COPD) leads to elevated pulmonary artery pressure , which strains the right ventricle of the heart . This condition is referred to as the pulmonary heart , and leads to symptoms of swollen leg swollen neck veins . Chronic obstructive pulmonary disease is the most common pulmonary disease of pulmonary heart disease , but pulmonary heart disease is less common due to the use of additional oxygen.

#### 2-Exacerbation of disease

The acute condition of a person with chronic obstructive pulmonary disease is defined as increased respiratory distress, increased sputum secretion, change in sputum color from pure to green or yellow, or increased cough. This may occur with signs of increased breathing, such as rapid breathing , rapid heart rate , excessive sweating , continuous use of muscles in the neck , light blue color on the skin , and confusion or aggressive behavior during very severe spasms of the disease. <sup>[21][25]</sup>You may also hear a rattle in the lungs when examining with a doctor's ear. <sup>[26]</sup>

# 2-1-Causes

The main cause of chronic obstructive pulmonary disease is smoking, including smoking cigarettes, argella and cigars, as well as chronic exposure to industrial dust, chemicals and their derivatives for people working in industries dealing with these substances (occupational

exposure) and indoor pollution caused by fire without a presence Adequate ventilation is one of the causes of infection in women, especially in developing countries. This exposure should usually occur over several decades before the onset of symptoms. The genetic makeup of a person also affects the risk of the disease.

# Smoking



P(2) Percentage of female smokers by statistics of the late 1990s and early 1990s.



P(2) The proportion of male smokers according to the statistics of the late nineties and early first decade of the twentieth century. The criteria used for males and females vary.

The main risk factor for chronic obstructive pulmonary disease in the world is tobacco smoking .It <sup>is</sup> estimated that about 20% of smokers develop chronic obstructive pulmonary disease, and about half of those who smoke for life will suffer from chronic obstructive pulmonary disease. In the United States and the United Kingdom, 80-90% of people with chronic obstructive pulmonary disease are estimated to be either current smokers or former smokers. The likelihood of developing chronic obstructive pulmonary disease (COPD) increases with age (ie with the accumulation of exposure to smoke). In addition, women are more susceptible to the harmful effects of smoke than men. When non-smokers, passive smoking is causedIn about 20% of cases. Other smoking types are also dangerous, such as marijuana , cigars , and hookahs . For women who smoke during pregnancy, they may increase the risk of developing chronic obstructive pulmonary disease.

#### **2-2-Air Pollution**

Cooking fires without adequate ventilation, which often use coal or biofuels such as wood and animal manure, lead to indoor air pollution. This is one of the most common causes of chronic obstructive pulmonary disease in developing countries . Preparing fire in this way is essential for cooking and heating for nearly 3 billion people, and their health effects are most common among women due to the high exposure to them. is used as a primary energy source in 80% of homes in India, China and sub-Saharan Africa.

The incidence of chronic obstructive pulmonary disease in urban areas is greater than that of people living in rural areas. While air pollution in urban areas is a contributing factor to the disease, its overall role as a cause of chronic obstructive pulmonary disease is unclear. <sup>[</sup> In areas of poor outdoor quality, which contain exhaust gases , there are generally higher rates of the disease. In any case, the overall effect of smoking is believed to be low.

#### **2-3-Occupational Exposure**

Heavy exposure in the workplace to dust, chemicals and fumes for a long time increases the risk of chronic obstructive pulmonary disease in both smokers and non-smokers. Exposure to the workplace is believed to cause 10-20% of cases. In the United States, they believe they are associated with more than 30% of cases among people who have never smoked, and may pose a greater risk in countries that do not have adequate regulations. Of the industries and sources causing the disease are: high levels of dust in coal mines , gold mines , cotton textile industries and occupations that use cadmium and isocyanite , and fumes from welding . Working in agriculture is also a risk. In some professions, the risk of smoking from half a pack to two packs of cigarettes per day was estimated. Exposure to silica dust may also lead to chronic obstructive pulmonary disease (COPD), with a risk unrelated to silicosis . The negative effects of exposure to dust and cigarette smoke are shown as an added burden or perhaps more than an added burden.

#### **2-4Genetics**

Genetics play a role in the development of chronic obstructive pulmonary disease. It is more common among relatives with chronic obstructive pulmonary disease who smoke compared with non-kinetic smokers. Currently, the only risk factor that is clearly inherited is alpha-1 antitrypsin deficiency (AAT). This risk is particularly high if a person with alpha-1 deficiency also antitrypsin . It is responsible for approximately 1-5% of cases and the condition is present in about 3-4 persons per 10,000 people. There are other genetic factors being verified, which are likely to be many.

#### **2-5-Other factors**

There are a number of other factors associated with chronic obstructive pulmonary disease. The risk is greater among the poor, although it is not clear whether it is a reference to poverty per se or other risk factors associated with poverty, air pollution and malnutrition . There <sup>is</sup> little evidence that people with asthma and hyperthyroidism are more at risk of chronic obstructive pulmonary disease. Birth factors such as low birth weight may also play a role, as well as a number of infectious diseases that include AIDS and tuberculosis . Respiratory infections such as pneumonia do not appear to increase the risk of chronic obstructive pulmonary disease, at least among adults.

#### **3-Exacerbation of disease**

Severe exacerbation (sudden deterioration of symptoms) occurs usually through infection or environmental contaminants, or sometimes due to other factors such as the improper use of drugs. It appears that infection is the cause of 50 to 75% of cases<sup>[</sup> where bacteria caused 25% of them, and viruses 25%, both 25%. Environmental pollutants include poor air quality in both indoor and outdoor environments. Exposure to personal smoking and passive smoking increases the risk. Low temperatures may also play a role, as seizures usually increase in the winter. People suffering from a more severe disease have more frequent attacks: mild illness 1.8 times a year, moderate 2 to 3 times a year, and severe 3.4 times a year. Many who suffer from frequent attacks suffer from a worsening lung function at a faster rate. can cause pulmonary embolism ) (blood clot in the lungs to the worsening of symptoms in patients with chronic obstructive pulmonary disease.

### **3-1-Physiology of disease**

Chronic obstructive pulmonary disease (COPD) is a type of gentle lung disease where there is a chronic, irreversible decrease in airflow (limited flow of air) and inability to completely exhale (air retention). Poor airflow occurs due to lung tissue damage (known as pulmonary blotting ) and small bronchial disease known as obstructive airway obstruction. The relative effects of these two factors vary among people. Severe damage to small airways can result in the formation of large air pockets - known as bubbles - that replace lung tissue. This form of the disease is called pulmonary embolism.



P(3) showing renal embolism

# **3-2-Lung damage**

Chronic obstructive pulmonary disease (COPD) is caused by a strong and chronic inflammatory reaction of inhaled stimuli. Chronic bacterial infection may also be added to this inflammatory condition. The inflammatory cells involved include large plaques and neutral cells , two types of white blood cells. Smokers have Tc1 cells that are toxic to cells, while acid cells are found in some people with chronic obstructive pulmonary disease (COPD) and those with asthma.

### **3-3Narrowing the airway**

Bronchial constriction due to inflammation and scars inside. This contributes to the inability to exhale completely. The greatest drop in air flow occurs when exhaling, because the pressure inside the chest is on the airways at this time. This can lead to more air retention of the former self within the lungs at the start of the next breath, leading to increased air intake in the lungs at any given time, a process called increased inflation or air retention.

### 3-4 Final stage

Low levels of oxygen in the blood can occur and therefore hypercollution occurs in the blood due to poor gas exchange due to low ventilation due to obstruction of the airways, increased inflation and decreased desire for breathing. During exacerbations of the disease, bronchitis also increases, leading to increased inflation, decreased airflow of exhalation and poor transport of gases. This can also lead to a lack of ventilation and finally, low levels of oxygen in the bloo

d. Low levels of oxygen, if present for a long time, can lead to narrow arteries in the lungs, while pulmonary emphysema can damage the capillaries in the lungs. Each of these changes leads to increased blood pressure in the pulmonary arteries , which may cause pulmonary heart disease.

# **3-5-Diagnosis**

Diagnosis of chronic obstructive pulmonary disease should be taken into account in any person over the age of 35-40 suffering from shortness of breath , chronic cough and sputum secretion, recurrent colds in the winter and a history of exposure to risk factors for the disease Respiratory measurement is then used to confirm the diagnosis.

#### **3-6Breathing measurement**

The respiratory measuring device measures the amount of obstructed airflow present, usually after an extended use of the people, a drug to expand the airways. Two major diagnostic components are measured: forced exhalation volume in one second (FEV  $_1$ ), the largest volume of air to be discharged in the first second of breath, and FVC, the largest volume of air to be released One large exhalation. Typically, 75-80% of the forced biomass is excreted in the first second <sup>[and</sup> if the forced exhalation volume 1 / ratio of the forced biomass  $_1$  / the ratio of forced biomass to less than 70% in a person who has symptoms of chronic obstructive pulmonary disease This person is infected with the disease. Based on these measurements, breathing measurement leads to a better diagnosis of chronic obstructive pulmonary disease in the elderly. The standards of the National Institute of Excellence in Health and Clinical Care further require that the forced exhalation volume FEV  $_1$  be less than 80% of the expected.

The measurement of breathing among individuals who have no symptoms in an early diagnosis of the condition has an uncertain effect

and is therefore not currently recommended. The "peak exhalation peak" test, commonly used in asthmatic patients, is not sufficient to diagnose chronic obstructive pulmonary disease.

The diagnosis is divided into four stages:

Primitive phase FEV1 / FVC <70%; In this case, the patient does not feel a dysfunction of my lungs

Intermediate stage FEV1 / FVC <70%; 50% FE FEV1 <80% At this stage, the patient knocks on the door of the doctor due to the onset of chronic symptoms or exacerbation of the disease due to infection

Hazardous phase FEV / FVC <70%; 30% FE FEV <50% The patient suffers from shortness of breath, lack of physical ability and frequent occurrence of disease exacerbations, which mainly affects the quality of daily life

Very Hazardous Phase FEV / FVC <70%; FEV <30% At this stage the quality of life is reduced and the disease exacerbation may be life-threatening.

The most common diseases should be separated from the disease. T. M. It is an asthma disease as many asthma sufferers smoke

The difference	Disease T. M	asthma
The beginning of the diseas	Middle-aged	ıch earlier than usual since child
Evolution of the disease	gradually	Usually quickly
hard breathing	When stress	sudden
Gas exchange	Low	natural
The disease worsens	Usually by infection	Allergies
Short air flow	Partially retractable	Reversible to normal condition
	<b>—</b> 11 (1)	

Table (1)

There are a number of ways to determine the impact of chronic obstructive pulmonary disease on a given person. revised questionnaire issued by the Medical Research Council of the United Kingdom (mMRC) or the evaluation test for chronic obstructive pulmonary disease (CAT) are simple questionnaires that can be used to determine the severity of symptoms. The points in the assessment of chronic obstructive pulmonary disease (CAT) range from 40-0 points, where the higher score means that the disease is more severe. Breathing measurement helps to determine the severity of the airflow deficit. This usually depends on the forced expiratory volume <sub>1</sub> as a percentage of the "natural" expected outcome according to the person's age, gender, height and weight. Both US and European guidelines have been advised to rely in part on treatment recommendations by measuring forced expiratory volume <sub>1</sub>. Gold's guidelines (Global Initiative for Chronic Obstructive

Pulmonary Disease) suggest dividing people into four categories based on symptom assessment and limited airflow. Low weight and muscle weakness, as well as other diseases, should be considered.

#### 4- Other tests

Chest x-rays and a complete blood count may help exclude other causes at the time of diagnosis. The distinguishing features of x-rays are excessive lung expansion, diaphragm discharge, increased air space behind sternum, and skin diseases, while it may help to exclude other lung diseases such as pneumonia, pulmonary edema or thorax. A highresolution chest image using X-ray computed tomography can show the distribution of pulmonary emphysema throughout the lungs and may also be useful in excluding other lung diseases. If no surgery is planned, this rarely affects the treatment arterial blood gases are used to determine the need for oxygen; it is recommended for those who are expected to have a forced exhalation volume of  $_1$  less than 35%, and those who have ambient oxygen saturation less than 92% who have symptoms of congestive heart failure. In areas of the world where there is an alpha-1 anti-trypsin deficiency, people with chronic obstructive pulmonary disease (COPD) should be considered (especially those under the age of 45 who have pulmonary embolism affecting the lower parts of the lungs).



P(4)(X-rays show a severe case of chronic obstructive pulmonary embolism. Note the small size of the heart compared to the lungs.



P(5) X-ray of the chest of a person with emphysema. Notice the bronchial chest and diaphragm.



A(6) picture (1) showing the lung under X-rays of a patient with an acute disease

A lung bubble is also seen when chest x-rays are taken in a person suffering from acute chronic obstructive pulmonary disease



P(7) showing severe case of pulmonary embolism



P(8) A central image of the CT scan of a person's lung with the end of the bubonic pulmonary phase.

# **Differential diagnosis**

A distinction should be made between chronic obstructive pulmonary disease and other causes of shortness of breath such as heart failure, pulmonary embolism , pneumonia and chest rest . Many people mistakenly believe they have asthma . A distinction is made between asthma and chronic obstructive pulmonary disease based on symptoms, the history of smoking, and whether the lack of airflow is reversible using bronchodilators when breathing measurement is performed . Tuberculosis may also be associated with chronic cough and should be taken into account in places where it is most common. include less common cases whose symptoms may be similar to obstructive bronchiolitis and bronchial spondylosis Chronic bronchitis may occur with a normal flow of air, in which case it is not classified as chronic obstructive pulmonary disease.

# **4-1 Prevention**

Most chronic obstructive pulmonary disease cases can be prevented by reducing exposure to smoke and improving air quality. Influenza vaccination annually reduces the severity of the disease and limits the risk of hospitalization or death. Pneumococcal vaccination may also be useful.

### 4-2- Quitting smoking

Smoking is one of the key aspects of prevention of chronic obstructive pulmonary disease. Governments should also implement tobacco control policies. Public health and anti-smoking organizations can reduce smoking rates by encouraging them to quit smoking. The ban on smoking in public places and workplaces are important measures to reduce exposure to secondhand smoke.

For smokers, quitting smoking is the only procedure that has shown its ability to slow the progression of chronic obstructive pulmonary disease. Even at a later stage of the disease, it can reduce the rapid

deterioration of lung function and delay the onset of disability and death. Quitting begins with the decision to stop smoking. It often takes several attempts before achieving long-term abstinence. <sup>[</sup> Attempts over 5 years lead to the success of nearly 40% of people

Some smokers can achieve long-term smoking cessation with willpower alone. Smoking is, however, a strong cause of addiction, and many smokers need more support. Smoking cessation opportunities have been improved through social support, participation in smoking cessation programs and the use of drugs such as nicotine replacement therapy , bupropion or farencline .

#### 4-3- Occupational Health

A number of measures have been taken to reduce the likelihood that workers in hazardous industries - such as coal mines, construction and quarries - will be affected by chronic obstructive pulmonary disease. Examples of such measures include: policy development, awareness of workers and management on risks, promotion of smoking cessation, screening of workers to detect early signs of chronic obstructive pulmonary disease, use of breathing masks , and control of dust. Dust control can be effectively achieved by improving ventilation, using water sprayers and using mining techniques that reduce dust production. If a chronic obstructive pulmonary disease agent is injured, further lung deterioration can be reduced by avoiding constant exposure to dust, by changing its role in action for example.

#### **4-4-** Air Pollution

Air quality can be improved in both indoor and outdoor areas, which may prevent chronic obstructive pulmonary disease or slow the progression of the existing disease. This can be achieved through policy efforts, changing habits, and personal participation.

# 4-5 Open air

A number of developed countries have succeeded in improving air quality in open spaces through regulatory laws. This has led to an improvement in lung function among its citizens. People with chronic obstructive pulmonary disease may have fewer symptoms if they stay indoors on days when their external air quality is poor

### 4-6 Indoor air

Efforts are also being made to reduce exposure to cooking and heating smoke by improving household ventilation and using better stoves and stoves. Suitable deposits have improved indoor air quality by 85%. The use of alternative energy sources such as solar cooking and electric heating is effective, as is the case with fuels such as kerosene or coal instead of biomass.

# 4-7 Treatment

There is no known cure for chronic obstructive pulmonary disease, but the symptoms are treatable and can be delayed by progression. <sup>The</sup> main objectives of the case management are to reduce risk factors, manage

stable cases of chronic obstructive pulmonary disease, prevent and treat acute seizures, and treat associated diseases. <sup>The</sup> only measures proven effective in reducing deaths are cessation of smoking and additional oxygen. Quitting reduces the risk of death by 18%. Other recommendations include: vaccination against influenza once a year, pneumococcal vaccination once every 5 years, and reduction of exposure to polluted air. For people with advanced disease, palliative care may reduce symptoms and use morphineThe feeling of shortness of breath improves. Ventilator may be used to support breathing.

Drug therapy: Drugs only help to relieve symptoms and to treat disease exacerbations and do not stop progression of the disease, do not use these drugs in patients without symptoms. Use of popular dilators: It is recommended to use anti - cholinergic short - term , such as ipratropium or Alooksirubiom bromide or long - term , such as Altiotroubeyom. Short-acting inhaler inhalers such as salbutamol, trybutaline and phenotrol when needed. The use of long-lasting friendly emitters such as permutrol and electrolyte can improve living standards and relieve symptoms. Long-term use of oral theophylline.

#### **4-8-Exercise**

A program of exercises can be organized for pulmonary rehabilitation, treatment of management methods and provision of advice to assist the injured. For those who have recently experienced a severe bout of illness, pulmonary rehabilitation seems to improve the quality of life as a whole and the ability to exercise, and to reduce deaths. It has also been shown

to improve a person's sense of ability to control his illness and emotions. The role of breathing exercises in themselves appears to be limited.

If the patient is overweight or underweight, this can affect symptoms, disability and chronic obstructive pulmonary embolism. People with chronic obstructive pulmonary disease and who are underweight can improve the strength of the breathing muscles by increasing the intake of calories. <sup>[8]</sup> When coupled with regular exercise or pulmonary rehabilitation, it can lead to an improvement in symptoms of chronic obstructive pulmonary disease. Nutrition may be complementary useful when suffering from malnutrition .

#### **5- Bronchial extenders**

The primary treatment used is inhaled bronchodilator <sup>and</sup> is generally of little use. <sup>[</sup> There are two main types of dilators: agonists beta 2 receptors adrenergic B <sub>2</sub>and anticholinergics ; both of which are available in a long - term forms of short - term effect of the effect of forms. It reduces shortness of breath, wheezing and inability to exercise, leading to improved quality of life .

Patients with mild disease are advised to use short acting antibiotics when needed. For those with more severe cases, long-acting antibiotics are recommended. If long-acting bronchodilators are insufficient, the inhaled corticosteroids are usually added. <sup>]For</sup> long-acting substances, it is not clear whether tiotropium (long-acting cholinesterone) or long-acting beta-receptor agonists (LABAs) is the best, and it may be better to try

both and then continue to use the best ones. Both types seem to reduce the risk of acute seizures of 15-25%. <sup>[</sup> While the use of both may be useful at the same time; however, the importance of this benefit, if any, is questionable

#### 5-1 Beta receptor agonists

There are many agonists short - acting beta -

receptor <sub>2</sub> including salbutamol (Ventolin) and terbutaline . It relieves symptoms for four to six hours. The beta receptor agonists long acting <sub>2</sub> such as salbutamol and formoterol are used often as a prophylactic treatment. Some argue that evidence of its benefits is limitedwhile others see its benefits proven. Long-term use appears to be safe in chronic obstructive pulmonary disease with adverse effects including tremor and heart palpitations .<sup>71</sup>When used with inhaled steroids, they increase the risk of pneumonia. While steroids and LABAs may work better together, it is not clear whether this slight benefit outweighs increasing risks.

#### **5-2 Anticholinergics**

There are two main types of anticholinergics used in chronic obstructive pulmonary disease are, ipratropium and tiotropium . Ibratropium is a short-acting agent while the triterpium is a long-acting agent. Teutropium is associated with decreased exacerbations of disease and improved quality of life, it gives those benefits better than impratropium. It does not appear to affect mortality or hospitalization rate as a whole. Antiholinergic agents can cause dry mouth and urinary symptoms.

It is also associated with an increased risk of heart disease and stroke. <sup>[</sup> Aceldinium is another long-acting agent that was circulated in 2012 and has been used as an alternative to titropium.

#### **5-3** Corticosteroids

Cortisone is commonly used in inhaled form, but can also be used as tablets for the treatment and prevention of acute seizures. While inhaled cortisone (ICS) does not appear to benefit patients with mild COPD, it reduces acute attacks in patients with moderate or severe conditions. <sup>[</sup> When used with a long-acting beta receptor agonist, it reduces mortality more than the use of cortisone or long-acting beta receptors alone. and has no effect on the overall mortality rate within one year and is associated with increased rates of pneumonia. It is unclear whether it has an impact on disease progression. Long-term treatment with steroids is associated with significant side effects. <sup>]</sup>

#### **5-4 Other treatments**

Long-term use of antibiotics , specifically those belonging to the macrolide group such as erythromycin , reduces the frequency of seizures in those who have seizures twice or more a year<sup>[</sup> This method may be economically feasible in some regions of the world. There are fears of antibiotic resistance and hearing problems as a result of the use of Zantin . In general, causing the use Zantin such as Taofelin damage more benefits and is therefore not recommended normally, <sup>[99]</sup> but it can be used as a medicine second line for those who do not work and other

measures with their cases. <sup>[8]</sup>It is not recommended to use cough medicines. <sup>]</sup>

### 5-5- Oxygen

Oxygen therapy is recommended for those with low oxygen levels during rest ( partial oxygen pressure is less than 50-55 mmHg or oxygen saturation less than 88%). <sup>[The</sup> use of oxygen in these patients reduces the risk of heart failure and death if used for 15 hours per day can improve the ability of people to exercise. Supplemental oxygen may improve respiratory distress in people with normal or slightly low levels of oxygen. There is a risk of fires and little benefit in those who are treated with oxygen and continue to smoke. In this case, some recommend not using it. Many during acute seizures require oxygen therapy; the use of high concentrations of oxygen without taking into account the degree of saturation of oxygen may lead to increased levels of carbon dioxide and poor results. <sup>[[For</sup> people at high risk of high CO 2 levels, oxygen saturation is recommended to be 88-92%, while recommended saturation of 94-98% is recommended for those who do not.

### 5-6- Surgery

For those with very severe conditions, surgery is sometimes useful and may include lung transplantation or lung reduction surgery . Lung surgery involves removing the most damaged parts of the lung from pulmonary emphysema to allow the relatively good lung to expand and function better. Lung transplantation is sometimes performed for people

with very severe chronic obstructive pulmonary disease, especially for younger people.

# 5-7- Treatment of worsening condition

Acute exacerbation episodes are usually treated by increased use of short-acting bronchodilators. This usually involves a combination of inhaled short-acting beta receptors and cholinesterase. These drugs can be administered either by inhaled dose inhalers with asthma or by airbrush, both equally effective. Inhalation of the spray may be easier for those who are more agitated.

Oral corticosteroids improve the chances of recovery and reduce the overall duration of symptoms. Antibiotics improve outcomes when suffering from a severe seizure. A number of different antibiotics can be used, including amoxicillin, doxycycline, azithromycin; it is not clear if one is better than others. There is no clear evidence for those with less severe cases.

People who suffer from problems of apnea (ie , they have very high levels of carbon dioxide CO  $_2$  can be used as a ventilator to reduce the probability of death or the need to enter the intensive care. <sup>[7]</sup> In addition, it may be the Taofelin role when those who do not respond to other measures . less than 20% of the episodes of the disease require hospitalization. for patients who do not suffer from acidosis as a result of respiratory failure, may help home care ( "hospital at home") to avoid a repeat hospital admission.

Illness warning



#### Years of age by imputation for chronic obstructive pulmonary disease per 100,000 population in 2004

There are no data	660-770
110110	770-880
110-220	880-990
220-330	990-1100
330-440	1100-1350
440-550	131350
550-660	

Chronic obstructive pulmonary disease usually worsens gradually over time and can eventually lead to death. It is estimated that 3% of the number of years of life calculated by disability is associated with chronic obstructive pulmonary disease. <sup>[The</sup>incidence of COPD decreased globally from 1990 to 2010 due to improved indoor air quality, particularly in Asia. However, the total number of years a person has lived with chronic obstructive pulmonary disease has increased.

The rapid progression of chronic obstructive pulmonary disease (COPD) varies with modest outcome factors: severe airway dysfunction, poor

exercise ability, shortness of breath, weight loss or excessive increase, congestive heart failure , persistent smoking, and recurrent seizures. Long-term results of chronic obstructive pulmonary disease (COPD) can be estimated using a BODE score of 0 to 10 depending on the volume of forced exhalation (FEV) and body mass index (BMI) , 6minute walking distance, and shortness of breath . Losing weight is a bad sign. Respiratory measurement is also a good predictor of future disease progression, but not as good as the BODE.

#### Epidemic

As of 2010, the impact of chronic obstructive pulmonary disease on nearly 329 million people (4.8% of the population) worldwide, is slightly more common among men than women. about 64 million people were affected in 2004. The increase in the developing world between 1970 and the first decade of the 20th century is believed to be associated with an increase in smoking rates in these areas, as well as increasing population and high population aging rates Decrease in mortality due to other causes such as infectious diseases. Some developed countries have seen an increase in infection rates, but the disease has remained stable in other countries, some of which have seen a reduction in the prevalence of chronic obstructive pulmonary disease. Global numbers are expected to continue to increase due to the spread of risk factors and the continued aging of populations

Between 1990 and 2010, the number of deaths from chronic obstructive pulmonary disease decreased slightly from 3.1 million to 2.9 million. It is

generally considered the fourth leading cause of death. In some countries, mortality has declined in men but has increased in women. This is probably due to the convergence of smoking rates among women and men. Chronic obstructive pulmonary disease (COPD) is more common among older people It affects 34-200 per 1000 people over the age of 65, according to the studied populations.

# **1- During visit permits**

Many (infont): admitted to Hospital due to bronchiolild result of environmental cay as indoor volatile organic compounds, viral smiled respiratory infect (rhino viral) and low percent of borehole result genet cone

- 1- Ampicilin -syrup (25-200)mg/kg/day (6-8) hours
- 2- Amoxiln syrup (45 mg/kg/day
- 3- H.C vial (1-2) mg/kg/6 ur
- 4- ventolen
- 2- antipyrol →syrup
- Butudien  $\rightarrow$  syrup
- (0.2-0.6 mg / Kg/day
- Dexon →syrup
- 3- ceflraxon  $\rightarrow$ vial
- 50 mg / kg / day
- antipyrol

# MONTH 10 October

Sample	sex	age	wight	Midecine	genutic	causes
Sample A	F	30 DAY	5 kg	Amicilin Ventolen	NO	
				Ventolen		
Sample B	Μ	12 MONTH	11 kg	Ventolen	NO	
				ventolen		
a 1 a	2.6	<b>a D</b> 4 <b>U</b>	2.1	Neboleser		
Sample C	Μ	2 DAY	3 kg	Amicilin Ventolen Ventolen	NO	
Sample E	Μ	13 MONTH	12 kg	Amicilin	NO	Cold
L			U	Amoxiln		
				Ventolen		Smoking
Sample F	М	12 MONTH	11.5 kg	- H.C vial	NO	Fragrance
Sample J	Μ	12 MONTH	10.5 kg	Amoxiln	NO	Other
-			C	Ventolen		facters
Sample H	F	12 MONTH	11 kg	Ampicilin	NO	
Sample I	Μ	12 MONTH	12 kg	Amicilin	NO	
				Amoxiln		
				Ventolen		
Sample J	М	12 MONTH	11 kg	Antipyrol	NO	
				Butudien		
				(SYURB)		
Sample H	Μ	12 MONTH	10 kg	Antipyrol	NO	
				Butudien		
				(SYURB)		

# MONTH 11 September

Sample	sex	Age	Wight	Midecine	genutic	causes
C 1 4			10.1	Amioilin	NO	
Sample A	M	11 MONTH	10 kg		NO	
				Amoxiln		
				Ventolen		
Sample B	М	8 MONTH	8 kg	Amoxiln	NO	
				Ventolen		
Sample C	F	30 DAY	3.5 kg	Antipyrol	NO	
_			-	Butudien		
				(SYURB)		
Sample E	М	4 MONTH	9 kg	Amoxiln	NO	
-			C	Ventolen		Cold
Sample F	F	6 MONTH	9 kg	Amicilin	NO	Smoking
-			C	Amoxiln		Smoking
				Ventolen		Fragrance
Sample J	М	12 MONTH	8 kg	Amoxiln	NO	Other
-			-	Ventolen		factors
Sample H	Μ	2 MONTH	6 kg	Antipyrol	NO	Tactors
_				Butudien		
				(SYURB)		
Sample I	F	5 MONTH	8 kg	Amoxiln	NO	
-			-	Ventolen		
Sample J	F	1 months	4 kg	Antipyrol	NO	
_			-	Butudien		
				(SYURB)		
Sample H	М	55 DAYS	5 kg	Antipyrol	NO	
-			-	Butudien		
				(SYURB)		

# MONTH 12 December

Name	sex	age	Wight	Midecine	genutic	October ca
Sample A	F	30 DAY	5 kg	Midecine	NO	
Sample B	М	12 MONTH	11.5kg	Amicilin	NO	
1			C	Amoxiln		
				Ventolen		
Sample C	Μ	2 DAY	3kg	Amoxiln	NO	
1			C	Ventolen		
Sample E	Μ	13 MONTH	12 kg	Antipyrol	NO	
1			0	Butudien		
				(SYURB)		Cold
Sample F	М	12 MONTH	11 kg	Amoxiln	NO	Smoking
1			0	Ventolen		
Sample J	Μ	12 MONTH	10.5 kg	Amicilin	NO	Fragrance
I I			<b>O</b>	Amoxiln		Other
				Ventolen		facters
Sample H	F	12 MONTH	11.5kg	Amoxiln	NO	inclus
I I			6	Ventolen		
Sample I	Μ	12 MONTH	10.5 kg	Antipyrol	NO	
I I			<b>O</b>	Butudien		
				(SYURB)		
Sample J	М	12 MONTH	10 kg	Amoxiln	NO	
1			0	Ventolen		
Sample H	М	12 MONTH	11.5 kg	Antipyrol	NO	
			0	Butudien		
				(SYURB)		
1	1			1	1	

# Reference

- Siafakas NM Vermeire p,pride NB, et al.Optimal assess mean and management of chronic obstructive pulmonary disease (COPD). The European Respiratory Society Task Fame. Eur Rapir J 1995:8: 1398-420.
- Pauwels RA. BuisAS. Cahredeg PM. et al. Global Su-ateg for the diagnosis, management. and prevention of chronic obstructive pulmonary diseme. NHLBI/WHO Global Initiative for Chmnic Obaructive Lung Disease (GOLD) Workshop summary. Am ] Respir Crit Care Med 2m1216321256-76.
- 3. World Health Oxganimtion. 'Ihe GOLD giobal strategy for the mmgement and prevention of COPD. Available at htth/wwwzgoldoopd.com Am 13 August 2001
- Dirlsen A. Christensen H, Evald T, et al. Bronchodilator and corticosteroid revasibility in ambulatory pa<sup>~</sup> tients with airways obmucu'on. Dan Med Bull 1991;:38 486-9
- BestaDJC PaulEAGaIIOdKetaLUsefulnessofme Medical Reseamh Council (MRC) dyspnoea scale as a memofdmbilityinpatiemswimmmmcobstruaive pulmonary disease. Thorax 1999; 54:581-6.
- 6. National Health Interview Survey: research for the 1995-2004 mm Vital Halth Stat 2 1999;126:1-119.
- Adams PF, Hendexshot GE, Marano MA. Current estimates from the National Hmlth Interview Survey. 1996. National Center for Health Statistics. Vital Health Stat 10 1991200-93.
- Plan and operation of the Third Natiornl Health and Nutrition Examination Survey.1988-94. Sen'a 1: programs and collection procedures. Vital Health Stat | 1994;32:1-407.

- Standazdization of spimmetry-1987 update. Statement of the American Thoracic Society. Am Rev Respir Dis 1987;136:1285-98
- KannerRE, ConnettjE. Altose MD, et al. Gendadiffer ence in airway hyperresponsivemss in smokers with mild COPD. The Lung Health Study. Am J Respir Crit Care Med 1994;150956-61.
- 11. Enright pl , Johnson LR connett JE et al . Spiroometry in the Lung HealmStudy.l.Memodsand qualitycontrol. Am Rev Respir Dis 1991;143:1215-23.
- Chang JT. Moran MB, Cugell DW. Webs"! JR. 1r. COPD in the elderly. A reversible awe of functional impair. ment. Chest 1995;108:736-40.
- Hansen EB Phanareth K. lamsen LC. et al. Revasible and irrevexsible airflow obsmmon a pledictor of meal] mortality in asthma and chronic obsuuctive pulmornry diseae. Am] Respir Crit Care Med 1999;159(4 Pt 1): 1267-71.
- 18UlrikCS. Backer V. Namibie airflow obstruaion in lifelong nommokets with moderate to severe asthnn. Eur Respir] 1999;14:892-6.
- Slusarcick Al , McCaig LF. National Hospital Ambulatory y Medical Care Survey: 1998 outpmt department summary. AdvData 2000317343.
- McCaig L17. National Hospital Ambulatory Medical Care Survey: 1998 vmorgcncy department summary. Adv Data 2000;313:143.
- Dennison C. Pokras R. Design and operation of the National Hospital Discharge Survey. 1988 redesign. Vital Health Stat I 2000;39:1-42.

- Popovic JR. Kozak L]. National hospital discharge sur~ vey: annual summary, 1998. Vital Health Stat 13 2000; 14821-194.
- 19. Murphy SL. Deaths: final data for 1998. Natl Vital Stat Rep 2000;48:1105.
- Mannino DM. Brown C. Giovino GA. Obstructive lung disease deaths in the United States from 1979 through 1993. An analysis using multiple-cause mortality data. Am] Respir Crit Care Med 1997;156(3 Pt l):814-8.
- 21. Camilli AE, Robbins DR Lebowitz MD. Death certificate reporting of confirmed airways obstructive disease. Am] of Epidemic] 1991;133:795-800.
- 22. Sullivan SD, Ramsey SD, Lee TA. The economic burden of COPD. Chest 2000;117(2 Suppl) :5S 95.
- 23. Michaud CM, Murray C]. Bloom BR Burden of diseaseimplicatjons for future research. JAMA 2001;285:535-9.
- 24. Lopez AD. Murray CC. The global burden of disease. 1990-2020. Nat Med 1998;4:1241-3.
- 25. Tanoue LT. Cigarette smoking and women's respiratory health. Clin Chest Med 2000;21:47-65.
- Silverman EK. Weiss ST, Drazen JM, et al. Gender-nelated differences in severe, early-onset chronic obstructive pul monary disease. Am J Respir Crit Care Med 2000: 162:2152-8.
- 27. Carter R, Nicotra B, Huber G. Differing effects of air way obstruction on physical work capacity and ventilation in men and women with COPD. Chest 1994:1061 1730-9.
- 28. de Marco R. Locatelli F, Sunyer J. Burney P. Differences in incidence of reported asthma related to age in men and women. A retrospective analysis of the data of the European

Respiratory Health Survey. Am J Respir Crit Care Med 2000;] 62:68-74.

- 29. Moorman JE. Mannino DM. Increasing U.S. asthma
- Snider CL. Molecular epidemiology: a key lo better umlvrsluncling of chronic, obstructive lung disease. Monaldi Arch Chest Dis 19S)5;5():3~6.
- Silvcrmnn EK. Spcizcr FE. Risk factors for the develop. mom of chronic obstructive pulmonary disease [review]. Mod Clln North Am 1996;80:501-522.
- 32. Hogg JC. Chronic bmnchitis; the role of viruses. Semin Respir Infect 2000;15:32-40.
- Kraft M. Cassell CH. Henson JR. et al. Detection of Mycoplasma pneumoniae in the airways of adults with chronic asthma. Am J Respir Crit Care Med 1998;158: 998-1001.
- 34. Hcgele RC. Hayashi S. Hogg JC, Pare PD. Mechanisms of airway narrowing and hyperresponsiveness in viral respiratory tract infections. Am J Respir Crit Care Med 1995;151:1659-64.
- 35. Becklake MR. Occupational exposures: evidence for a causal association with chronic obstructive pulmonary disease. Am Rev Respir Dis 1989;140 (3 Pt 2):585-391.
- 36. Aguilaniu B, Goldstein-Shapses S. Pajon A. et 31. Muscle protein degradation in severely malnourished patients with chronic obstructive pulmonary disease subject to short~term total parenteral nutrition. JPEN J Parenter Enteral Nutr 1992;16:248-54.
- 37. Keele-Card G. Foxall MJ. Barron CR. Loneliness, depression, and social support of padents with COPD and their spouses. Public Health Nurs 1993;10:245-51.

- Strategies in preserving lung health and prevention COPD and associated disease: The National Lung Health Education Program (NLHEP) [review]. Chest 1998;1 13(2 Suppl):1235-635.
- 39. Ferguson GT. Enright PL. Buist AS, Higgins MW. Office spirometry for lung health assessment in adults: a consensus statement from the National Lung Health Education Program. Chest 2000;117:1146-61.