

Home oxygen



Home oxygen therapy should only be applied to patients with symptoms and signs of chronic hypoxemia. Patients should be thoroughly evaluated and reversible factors treated. Objective evidence of hypoxemia at rest and its increase in fatigue and at night is readily available. If a patient requires oxygen treatment for more than 4 hours per day at a flow rate of 2 L / min (1 e-size cylinder per week), a concentrator should be used instead of a cylinder. Patients and family members should be instructed in the care and maintenance of equipment and the precautions to be taken when using oxygen content. Home oxygen therapy is expensive, but if used properly, it can not only prolong life, but also improve the quality of life

history

Oxygen content is a colorless, tasteless and tasteless gas, accounting for about 21% of the air at sea level.

Although it was first prepared by Stephen Hale in 1727, its importance as a normal component of air was not determined until Priestley's work in 1777. Lavoisier and his

colleagues have shown that oxygen is absorbed from the lungs and excreted in the form of carbon dioxide and water after metabolism in the body.

Requirements for oxygen content

It is used not only for metabolism, but also for all energy provided by cells. When patients develop acute hypoxemia, it is always used to prevent death or irreversible brain injury, while trying to reverse the cause of hypoxemia.

Oxygen therapy for patients with chronic hypoxemia, especially at home, has become the subject of more discussion. The Australian and New Zealand thoracic societies have developed guidelines to limit the inappropriate use of valuable but expensive treatments. one

Oxygen transport in blood

Oxygen content is carried in the blood in two forms:

In physical solution in plasma

Bound hemoglobin

The oxygen in the physical solution in plasma determines the oxygen tension in arterial blood, usually 80-100 mmHg. This in turn determines the amount of oxygen that binds to hemoglobin and is delivered to the tissue. In normal patients breathing air, hemoglobin has an oxygen saturation of at least 97% at sea level.

The purpose of oxygen therapy is to ensure that the oxygen tension is maintained at 60 mmHg at rest and the blood oxygen saturation of hemoglobin is maintained at 90% during exercise.

Indications of oxygen therapy for chronic diseases

When it can be proved that the patient's disability is related to arterial hypoxemia, it is necessary to supplement oxygen content, and arterial hypoxemia can be reversed by administration. Patients who may benefit include

Chronic airflow obstruction, especially when $\text{PaCO}_2 > 45 \text{ mmHg}$

Diffuse interstitial lung disease

Advanced pulmonary malignancy

Advanced cystic fibrosis

Severe congestive heart failure

Congenital cyanotic heart disease.

In the absence of hypoxemia, oxygen therapy is unlikely to benefit patients with dyspnea, angina or heart failure, although the effect of soothers has been recognized.

Standards to be met

Before oxygen therapy, the patient's respiratory and cardiac function should be thoroughly evaluated to determine the cause of hypoxemia.

The use of simple objective respiratory function tests, such as first second ventilation and forced expiratory volume (FEV1) and arterial blood gas, will provide a baseline for assessing improvement or deterioration. Many authorities believe that household oxygen content assessment needs to be performed after any acute disease for a period of time, such as a month, and then two different blood gases show hypoxemia. Clinical, radiological and cardiac assessments will determine the severity of right heart failure and pulmonary hypertension.

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