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Home Based Oxygen Therapy

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I. INTRODUCTION

Our body needs the gas oxygen to function properly. To produce energy, our cells require oxygen. Our lungs take in oxygen from the air we breathe[1]. Our lungs release oxygen into our blood, which then carries it to our organs and other body tissues[2]. Blood oxygen levels may be too low as a result of certain medical conditions. We might experience fatigue, shortness of breath, and mental confusion if our blood oxygen level is low. Our body may also suffer harm as a result. We can get more oxygen by using oxygen therapy[3].
Extra oxygen (more than 21%) is given to the patient during oxygen therapy. It is frequently utilised in prehospital and hospital settings as well as in home oxygen therapy[4].

II. Meaning of Oxygen Therapy

A treatment that gives you more oxygen to breathe in is called oxygen therapy. Supplemental oxygen is another name for it. Only a prescription from your doctor can get you access to it. It can happen to you at home, in a hospital, or in another medical facility. Some people only require it for a brief time[5].

- More oxygen is prescribed as part of oxygen therapy in order to keep tissue oxygenation.
- Those with low blood oxygen levels can benefit from home oxygen therapy.
- Home oxygen therapy increases the amount of oxygen in the blood and, as a result, the amount of oxygen that reaches the vital organs.

III. Uses of Oxygen Therapy at home

Oxygen therapy at home (Long Term Oxygen Therapy) is needed for the patients who have conditions that causes low blood oxygen such as:

- ❖ Chronic Obstructive Pulmonary Disease (COPD)
- ❖ Interstitial Lung Disease (ILD)
- ❖ Pneumonia
- ❖ Covid-19
- ❖ Severe Asthma
- ❖ Cystic fibrosis
- ❖ Heart Failure

IV. Benefits of Home Oxygen Therapy

- ❖ Lessen your tendency to get out of breath
- ❖ Feel less worn-out
- ❖ Improved sleep
- ❖ Increase your level of activity.

V. Using oxygen therapy at home

Oxygen Equipment:
Home oxygen therapy is primarily administered:

- ❖ A nasal cannula is a set of small tubes that are inserted into the nostrils.
- ❖ It is worn with a mask that covers the mouth and nose.
- ❖ Some individuals might require either a tracheostomy—a tube placed in the front of the neck—or a windpipe tube, which is placed in the mouth.

The two sources of oxygen are medical oxygen cylinders and oxygen concentrators.

- Long tubing on a home oxygen concentrator enables the user to move freely throughout the home. By removing the nitrogen from the air in the space, it concentrates oxygen. It needs electricity to run.
- A portable oxygen concentrator is a smaller, lighter device that is made to be carried outside the home. They have a power source inside.

There are 3 different kinds of equipment that can provide you with oxygen:

- ❖ A portable oxygen cylinder, a large cylinder, and home oxygen concentrator.

Screening clients for the use of home oxygen therapy:

An easily accessible pulse oximeter can be helpful for identifying patients who might benefit from LTOT. SPO_2(Saturation less than 90%) needs oxygen therapy.

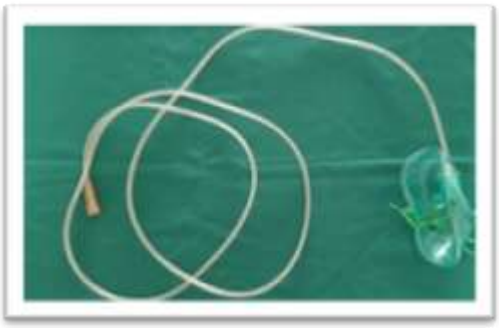
VI. Home Use Instructions for Oxygen

The guidelines given by American Lung Association will help you to use oxygen safely at home. Every time you use your oxygen unit, take all the necessary steps[6]

Step 1: Check Your Supply

- ✓ Do a hand wash.
- ✓ Set your portable oxygen concentrator or compressed oxygen tank to pressure (POC). Observe the directions given to you by your doctor or the supplier of your medical supplies.
- ✓ Make sure you have enough oxygen by checking the tank's oxygen gauge.
- ✓ When to call for more oxygen will be specified by your medical supply company, and the company will also deliver your oxygen on a regular basis.
- ✓ If you use a humidifier bottle, be sure to check the water level.
- ✓ Refill it with sterile or distilled water when the level is at or below halfway full.

Step 2: Connect the Tube



- ✓ As instructed, connect the cannula tubing to your oxygen supply.
- ✓ Make sure the tubing is not obstructed or bent.

Step 3: Determine Your Flow Rate

- ✓ Set the oxygen flow to the rate recommended by your healthcare provider.
- ✓ If your provider doesn't instruct you to, never alter this rate.
- ✓

Step 4: Put the Cannula in Your Nose

- ✓ Do a hand wash.
- ✓ Insert the cannula into your nose and breathe normally.
- ✓ You can submerge the cannula in a glass of water if you're unsure whether oxygen is flowing. When water bubbles, oxygen is moving through it.

Step 5: Maintain Your Equipment

- ✓ Clean your nasal cannula, air filter, and concentrator's exterior with soap and warm water once a week.
- ✓ Wash the humidifier bottle after each refill with soap and warm water, then thoroughly rinse it before adding distilled water.
- ✓ Replace your cannula or mask every 2-4 weeks. Every time you become ill, change.
- ✓ Replace your air filter once a month.
- ✓ Replace your tubing every two months.
- ✓ Ask your oxygen supplier to service your concentrator once a year.

- ✓ Ask your doctor how to clean a transtracheal catheter if you use one.

Step 6: Taking care of oneself

- ✓ With aloe vera or a water-based lubricant, keep your lips and nose moist. NEVER use petroleum jelly or other products with an oil base.
- ✓ To ease pain behind your ears brought on by the tubing, ask your oxygen equipment provider for foam cushions.
- ✓ Inform the local telephone, electric, and fire departments of your home's use of oxygen. Knowing you depend on oxygen; they might restore power to your house sooner if you lose it.
- ✓ Inform your loved ones, neighbours, and close friends that you use oxygen. In case of an emergency, they can assist.
- ✓ Call your doctor if you experience frequent headaches, feel tense, agitated, sleepy, or confused, have blue lips or fingernails, or are having trouble breathing.

VII. Complications

- ❖ Patients who are exposed to high concentrations of oxygen (more than 50%) for an extended period of time may experience toxic effects.
- ❖ Oxidative stress in atelectasis
- ❖ Vasoconstriction of the periphery
- ❖ Patients with chronic obstructive pulmonary disease may experience worsening hypercapnia as a result of uncontrolled oxygen delivery.

VIII. Conclusion

Oxygen is essential for all vital organs in our body and widely used in all medical specialities and at home-based setting. It is the first drug to be given in any crisis condition. Different types of oxygen delivering systems are available and necessary to choose depending on condition of individual patients. As each drug has its own adverse effect, oxygen therapy also has some risks. However, in any crisis condition, it is the lifesaving drug, therefore should never prevent oxygen since lifesaving is our first priority. Patients with severe hypoxemia and COPD have lower mortality rates when receiving oxygen therapy.

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