copdconnect

Learning Modules

ONTARIO LONG TERM CARE ASSOCIATION

Boehringer Ingelheim

IN INITIATIVE

Objectives of COPD Education

To provide care teams knowledge to assess (identify) and manage residents living with COPD. The ultimate goals are to improve resident quality of life and reduce Emergency Room transfers through the reduction of exacerbations and other related complications

Adapted from the program

Living Well with COPD™

Chronic Obstructive Pulmonary Disease

A plan of action for life

Livingwellwithcopd.com

Modules Overview

Module 1: What is COPD? *Symptoms, diagnosis and prevention*

Module 2: COPD Medications and Treatments

Module 3: Medication Techniques and Devices

Module 4: Oxygen Therapy for COPD

Module 5: Caregiver COPD Action Plan -The resident is feeling well

Module 6: Caregiver COPD Action Plan -The resident is feeling unwell

Module 7: Caregiver COPD Action Plan -The resident is feeling worst

Module 8: End of life care for COPD

Module 4

Topic:

Oxygen Therapy for COPD

At the end of this module we will ask you :

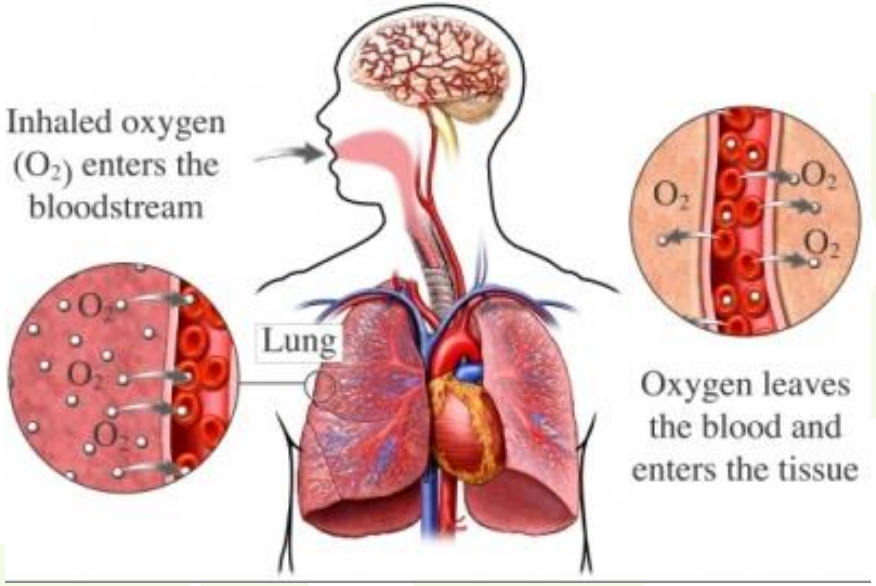
1. What is hypoxemia?
2. Name two ways to assess for low oxygen levels?
3. Is it best to give as much oxygen as possible to maintain an SpO2 of 98%?
4. Name three symptoms you might see in a COPD patient requiring oxygen?
5. Can anyone order oxygen?

What is oxygen?

- Oxygen is a drug and must be prescribed by a physician or nurse practitioner
- Oxygen is an odorless, colourless and tasteless gas
- There is 21% oxygen in the air we breathe. For some with a diagnosis of COPD, this is not sufficient to maintain comfortable breathing
- Oxygen is non –flammable (not easily set on fire) but supports combustion (makes a fire increase)

Oxygen and your body

- When we breathe, oxygen is inhaled into the lungs, transferred into the blood and carried by red blood cells to all parts of our body
- When the lungs cannot transfer enough oxygen into the blood, the cells and organs of the body do not have enough energy to function properly. This is called **Hypoxemia**
- To relieve this condition, **more oxygen** must be provided
- The waste product of respiration is carbon dioxide (CO_2) . It comes out when we exhale



The goals of oxygen therapy

- Correct hypoxemia
- Maintain tissue oxygenation
- Minimize the work of the cardio respiratory system
- Decrease the symptoms associated with COPD

Symptoms of Hypoxemia

- ✓ ↑ heart rate, respiratory rate, blood pressure
- ✓ Cyanosis (pale or bluish skin color)
- ✓ ↑ work of breathing (use of accessory muscles)
- ✓ Restlessness, confusion, headache

Assessing the need for oxygen-1

- **Measurement of SpO2 (clip on the finger)**
  - ✓ It measures the amount of oxygen attached to the red blood cells.
  - ✓ It is recorded as a percentage % and the normal is 98% in a healthy individual.
  - ✓ Oxygen is typically required and funded if the SpO2 is below < 88%

- Factors affecting a true reading are:
  - ✓ Smoking prior to test
  - ✓ Red/purple tones nail polish
  - ✓ Cardiac dyes and perfusion issues
  - ✓ Movement

Pulse oximeter

Assessing the need for oxygen-2

- **Measurement of PaO2 (blood sample from the radial artery)**

  ✓ It is obtained from an arterial blood gas sample

  ✓ It provides the pressure of oxygen dissolved in the blood

  ✓ It also provides pH and PaCO2 levels (pressure of Carbon dioxide)

  ✓ Normal adult PaO2 levels: 80 – 100 mmHg

  ✓ Indication for oxygen: PaO2 ≤ 55 mmHg

Prescribing Oxygen

- Oxygen must be prescribed by a physician or nurse practitioner
- Eligibility criteria is in place by province for the funding of oxygen
- A prescription must include the flow in litres per minute (lpm) and hours per day of use
- COPD patients are used to having lower oxygen levels
- A prescription may also indicate the range to keep the SpO2
  - for example, keep SpO2 87% to 92%
- A little bit is good, a lot is better, does not necessarily apply

Oxygen Delivery Devices

- **Nasal prongs** are the most common way to administer oxygen
  - ✓ Nasal cannulas are available in many sizes and styles
  - ✓ Humidification is not required for oxygen flows < 4 lpm
  - ✓ High flow nasal cannulas are available for use up to 12 lpm

- **Oxymask™** may be used with low and high flows of oxygen
  - ✓ Ideal for patients who are not tolerating a nasal cannula or have nasal irritation
  - ✓ Used with nasal and mouth breathers

Administering Oxygen - 1

- **Oxygen is supplied by:**
  - ✓ Stationary Oxygen Concentrators
  - ✓ Which produce oxygen from room air
  - ✓ Concentrators separate the oxygen from room air and concentrate the oxygen using a molecular sieve bed
  - ✓ A variety of low flow to high flow concentrators are available
  - ✓ Concentrators cannot be used with extension cords

Administering Oxygen - 2

- **Liquid oxygen systems**
  - ✓ a portable system is filled from a larger base unit

- **Concentrator/cylinder filling station option**
  - ✓ combines a concentrator for home use and a filling station for transfilling cylinders for mobility

Administering Oxygen

- **Portable Oxygen Concentrators**
  - ✓ May be powered from a wall outlet, with a 12 volt adapter in a car or with an internal battery
  - ✓ Continuous or pulse dose flow
  - ✓ Residents must be assessed to ensure they can trigger the oxygen flow

Precautions

- Do not let anyone smoke in the same room where oxygen is in use or is stored. This includes tobacco and non-tobacco substances including e-cigarettes
- When outdoors, do not let anyone smoke within 3 metres of the oxygen
- Do not use petroleum jelly, oily lotions, face creams or aerosol sprays
- Do not use ignition sources in the same room as oxygen, candles, open flames, fireplaces or gas stoves
- Use oxygen only as prescribed
- Too much oxygen can cause respiratory failure in COPD residents with an elevated $PaCO_2$ level

Now we ask you:

1. What is hypoxemia? *Low levels of oxygen in the blood.*
2. Name two ways to assess for low oxygen levels *Taking a SpO2 measurement with a pulse oximeter or a PaO2 level by an arterial blood gas.*
3. Is it best to give as much oxygen as possible to maintain at SpO2 of 98%? *No. COPD patients typically should be maintained from 88% - 92%.*
4. Name three symptoms you might see in a COPD patient requiring oxygen? *Cyanosis, increased work of breathing, confusion, restlessness or headaches.*
5. Can anyone order oxygen? *No, only a physician or nurse practitioner.*

Thank you for taking the time to learn more about residents who live with COPD

The next module – Caregiver COPD Action Plan: The resident is feeling well

Acknowledgements

It takes a community to fix COPD