• Avoiding smoking and exposure to secondhand smoke and environmental pollutants is vital to prevent further lung damage.

• Obtain immunization for pneumococcal pneumonia and annual influenza immunizations to prevent further episodes of serious respiratory disease.

Provide referrals to home health and respiratory care services as indicated, as well as for occupational therapy and counseling as needed.

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**Nursing Care Plan**

**A Client with ARDS**

Peggy Adamson is a 36-year-old single woman admitted to the hospital following a near-drowning in a local lake. On admission to the emergency department, Ms. Adamson is alert and oriented, having been rescued and resuscitated within 2 minutes of the accident. Rescuers report that she seemed to have aspirated “a lot” of water as she was waterskiing when the accident occurred. She is admitted to the intensive care unit for observation. Oxygen is started per nasal cannula at 6 L/min, intravenous fluids are administered to correct electrolyte imbalances, and 40 mg of furosemide (Lasix) is given intravenously for hypervolemia.

**ASSESSMENT**

Nadia Mucha cares for Ms. Adamson the evening of the day after her admission. Throughout her stay, Ms. Adamson has remained alert and oriented with stable vital signs. Her respiratory rate has been 20 to 24 per minute, with scattered crackles, oxygen saturations of around 94%, and a $P_O_2$ of 75 to 80 mmHg on 6 L/min of oxygen. Her pulse has been 96 to 100 and regular. On her initial assessment, Ms. Mucha notes that Ms. Adamson seems apprehensive and anxious. Although her blood pressure is 116/74, unchanged from previous levels, her heart rate is up to 106 and respiratory rate is 28 per minute. Her lungs have scattered crackles but good breath sounds throughout, unchanged from previous assessments. Ms. Adamson’s oxygen saturation has dropped to 84%, so Ms. Mucha orders ABGs and increases the oxygen to 8 L/min. ABG results show $P_O_2$ 65 mmHg and respiratory alkalosis pH 7.48, and $P_CO_2$ 32 mmHg.

Ms. Mucha orders a portable chest X-ray and notifies the physician of the arterial blood gas results and the change in Ms. Adamson’s status. The physician orders a nonrebreather mask at 50% $F_{IO}_2$ and a tidal volume of 700 mL in the assist-control mode at 16 breaths per minute. She has difficulty working with the ventilator initially, so a fentanyl drip is ordered to reduce her anxiety. Ms. Adamson’s oxygen saturation, $E_TCO_2$, and ABG results do not begin to improve until 5 mmHg of PEEP is added to ventilator settings. After 3 days of mechanical ventilation with PEEP and aggressive fluid and diuretic therapy, Ms. Adamson begins to improve. She is placed on SIMV, and over the course of another 3 days she is gradually weaned off the ventila-

**DIAGNOSES**

Ms. Mucha identifies the following nursing diagnoses for Ms. Adamson.

- Ineffective breathing pattern related to anxiety
- Impaired gas exchange related to effects of near-drowning
- Anxiety related to hypoxemia
- Risk for decreased cardiac output related to mechanical ventilation
- Risk for injury related to endotracheal intubation

**EXPECTED OUTCOMES**

As outcomes for the plan of care, Ms. Mucha indicates that Ms. Adamson will:

- Breathe effectively with the mechanical ventilator.
- Demonstrate improved oxygen saturation, $E_TCO_2$, and ABG values.
- Express fears related to intubation and mechanical ventilation.
- Demonstrate reduced anxiety levels (relaxed facial expression, ability to rest).
- Maintain adequate cardiac output and tissue perfusion.
- Tolerate endotracheal intubation and mechanical ventilation without evidence of infection or barotrauma.

**PLANNING AND IMPLEMENTATION**

Ms. Mucha plans and begins to implement the following nursing interventions.

- Obtain all necessary supplies and notify respiratory therapy and radiology in preparation for intubation and mechanical ventilation.
- Explain the purpose and procedure of intubation.
- Provide an opportunity to express fears related to intubation and mechanical ventilation; answer questions and provide reassurance.
- Discuss communication strategies while intubated; obtain a magic slate.
- Administer analgesics and/or sedatives as ordered.
- Monitor oxygen saturation and $E_TCO_2$ levels every 30 to 60 minutes initially after instituting mechanical ventilation; report changes to the physician.
- Obtain ABGs as ordered or indicated; monitor and report results.
- Suction via endotracheal tube as needed to maintain clear airways.
- Allow periods of uninterrupted rest.
- Monitor vital signs every 1 to 2 hours.
- Assess skin color, capillary refill, and the presence of edema every 4 hours.
- Monitor urine output hourly; report output of less than 30 mL per hour.
- Assess lung sounds and chest excursion every 1 to 2 hours.

**EVALUATION**

Ms. Adamson is intubated and placed on a volume-cycled ventilator at 50% $F_{IO}_2$ and a tidal volume of 700 mL in the assist-control mode at 16 breaths per minute. She has difficulty working with the ventilator initially, so a fentanyl drip is ordered to reduce her anxiety. Ms. Adamson’s oxygen saturation, $E_TCO_2$, and ABG results do not begin to improve until 5 mmHg of PEEP is added to ventilator settings. After 3 days of mechanical ventilation with PEEP and aggressive fluid and diuretic therapy, Ms. Adamson begins to improve. She is placed on SIMV, and over the course of another 3 days she is gradually weaned off the ventila-

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Nursing Care Plan
A Client with ARDS (continued)

3. What measures can nurses take to prevent the development of ARDS?

4. Develop a nursing care plan for Ms. Adamson for the nursing diagnosis, Powerlessness related to endotracheal intubation and mechanical ventilation.

See Critical Thinking in the Nursing Process in Appendix C.

Critical Thinking in the Nursing Process
1. Endotracheal intubation and mechanical ventilation were effective in supporting Ms. Adamson’s respiratory status as she recovered from ARDS. Discuss a possible sequence of events had it not been possible to wean her from the ventilator.

2. How might the presentation and management of an acute episode of respiratory failure due to ARDS differ from respiratory failure related to COPD?

3. What measures can nurses take to prevent the development of ARDS?

TEST YOURSELF

1. Admitting orders for a client with acute bacterial pneumonia include an intravenous antibiotic every 8 hours, oxygen per nasal cannula at 5 L/min, continuous pulse oximetry monitoring, bedrest with bathroom privileges and chair at bedside as desired, diet as tolerated, sputum specimen for C&S, CBC, urinalysis, and chemistry panel. Which order should the nurse carry out first?
   a. Start the oxygen per nasal cannula.
   b. Insert an intravenous catheter and start the prescribed antibiotic.
   c. Provide a dinner tray to the client.
   d. Obtain the sputum specimen.

2. All of the following nursing diagnoses are appropriate for a client with an acute asthma attack. Which is of highest priority?
   a. Anxiety related to difficulty breathing
   b. Ineffective airway clearance related to bronchoconstriction and increased mucous production
   c. Ineffective breathing pattern related to anxiety
   d. Ineffective health maintenance related to lack of knowledge about attack triggers and appropriate use of medications

3. Which of the following would be an expected assessment finding in a client admitted with chronic obstructive airway disease?
   a. AP chest diameter equal to or greater than lateral chest diameter
   b. Mental confusion and lethargy
   c. Three+ pitting edema of ankles and lower legs
   d. Oxygen saturation readings of 85% or less

4. Which of the following statements made by a client with a new diagnosis of lung cancer would indicate that the nurse’s teaching has been effective?
   a. “Well, since I’m going to die anyway, I may as well go home, put my affairs in order, and spend the rest of my time in the easy chair.”
   b. “I understand that because the cancer has already spread, I will be undergoing aggressive cancer treatment for the next several years to beat this thing.”
   c. “Even though I can’t undo the damage caused by cigarette smoking, I will try to quit to prevent further damage to my lungs.”
   d. “Having the ’big C’ is very scary; I’m just glad it is one of the more curable forms of cancer.”

5. The nurse caring for a client undergoing mechanical ventilation for acute respiratory failure plans and implements which of the following measures to help maintain effective alveolar ventilation?
   a. Keeps the client in supine position
   b. Increases the tidal volume on the ventilator
   c. Maintains ordered oxygen concentration
   d. Performs endotracheal suctioning as indicated

See Test Yourself answers in Appendix C.