**Medication Administration**

**The Client with Myasthenia Gravis**

**ANTICHOLINESTERASES/CHOLINESTERASE INHIBITORS**

- Neostigmine (Prostigmin)
- Ambenonium (Mytelase Caplets)
- Pyridostigmine (Mestinon, Regonol)
- For diagnosis: edrophonium chloride (Tension)

Cholinesterase inhibitors are used in myasthenia gravis to enhance the effects of acetylcholine at the remaining skeletal muscle receptors. Cholinesterase inhibitors do not cure or change the underlying pathophysiologic processes, but they can provide effective, lifelong improvement of symptoms. Because the cholinesterase inhibitors are nonselective, the neuromuscular, muscarinic, and ganglionic junctions are each affected.

Adjusting the dose to obtain maximum benefit with minimal side effects is a major consideration when administering cholinesterase inhibitors. Initially, small doses are given followed by incremental increases until optimal muscle strength is obtained. The dose may need to be adjusted when activities result in symptoms of undermedication, such as increased ptosis. Severe undermedication results in myasthenic crisis. Although a sustained release form of pyridostigmine is available for bedtime use, it should not be used during the day because of its inconsistent absorption.

When the client takes an overdose of anticholinesterase inhibitors, a cholinergic crisis occurs. Clients and family members must be taught the symptoms and actions to take in each crisis. The oral dose of neostigmine is approximately 30 times greater than parenteral doses.

Cholinesterase inhibitors should not be administered to clients experiencing obstruction of the intestinal or urinary tract. Caution is advised when administering these drugs to clients with asthma, hyperthyroidism, bradycardia, or peptic ulcer disease. Cholinesterase inhibitors can cross the placenta; reproductive counseling is indicated.

**Nursing Responsibilities**

- Obtain a baseline assessment of muscle strength and abilities, concentrating on swallowing and ptosis.
- Administer the medication parenterally if the client has dysphagia.
- Check the dose of the medication carefully when changing from oral to parenteral routes.
- Evaluate the effectiveness of the medication and document the response, for example, time when fatigue occurs in relation to activities.
- Promptly recognize and respond to manifestations of excessive stimulation of muscarinic receptors: excess salivation, urinary urgency, bradycardia, gastrointestinal hypermotility, diaphoresis. Atropine can be administered to combat these manifestations. Respiratory depression and failure can occur and require mechanical ventilation.
- Have a muscarinic antagonist (e.g., physostigmine) readily available to treat poisoning.

**Client and Family Teaching**

- Balancing symptom control with dosage is crucial; record time of dose and response in a journal. Note the time of day when fatigued and any adverse effects, such as excess salivation, sweating, slow heartbeat, and diarrhea.
- Take the medication about 30 minutes prior to meals to enhance swallowing and chewing.
- Report manifestations of myasthenic crisis immediately: severe muscle weakness, fast heartbeat, restlessness, difficulty breathing, increasing difficulty swallowing or speaking.
- Report slow heartbeat, increased salivation or sweating, and/or decreased blood pressure immediately.
- Review possible causes of myasthenic crisis: physical or emotional stress, infection, or reduction in the medication dosage.
- Wear or carry MedicAlert identification.

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**Nursing Care of the Client Having a Thymectomy**

**PREOPERATIVE CARE**

- Reinforce the physician’s explanation of the procedure, and prepare the client for chest tubes and tracheostomy. **Realistic preparation of what to expect postoperatively encourages compliance and alleviates anxiety.**
- Anticipate the need for alternative communication. **The client may have a tracheostomy; preoperative planning facilitates communication after surgery.**
- Allow sufficient time for questions. **Thymectomy is a major surgery requiring either a thoracotomy and sternal split or transcervical approach. The client is usually anxious, and adequate time must be allocated to preoperative instruction.**

**POSTOPERATIVE CARE**

- Provide meticulous pulmonary hygiene: turning, deep breathing, and coughing at least every 2 hours; use an incentive spirometer. **Regardless of surgical approach, measures are aimed at preventing pulmonary complications of atelectasis and pneumonia.**
- Clients with a thoracotomy and sternal split procedure will require care of the anterior chest tube. Observe for complications; such as pneumothorax. **Air may enter the thoracic cavity—be alert for sudden chest pain and dyspnea, decreased breath sounds, and early signs of shock, such as restlessness.**
- Manage pain with scheduled analgesic therapy. **Maintaining a therapeutic blood level of analgesic provides better pain control than waiting until the client requests medication, as on a prn basis.**