Introductory Clinical Pharmacology

Chapter 33
Cholinesterase Inhibitors
Cholinesterase Inhibitors: Actions and Uses

• Actions
  - Cholinesterase inhibitors act to increase level of acetylcholine in CNS by inhibiting its breakdown and slowing neural destruction

• Uses
  - Cholinesterase inhibitors are used to treat dementia associated with AD
Cholinesterase Inhibitors: Adverse Reactions

- Generalized adverse reactions
  - Anorexia; nausea; vomiting; diarrhea; dizziness; headache
- Tacrine is particularly damaging to liver and can result in hepatotoxicity
Cholinesterase Inhibitors: Contraindications and Precautions

• Cholinesterase inhibitors are contraindicated in patients with hypersensitivity to drugs and during pregnancy and lactation

• Tacrine should not be used in patients with known liver dysfunction

• These drugs are used cautiously in patients with renal or hepatic disease; bladder obstruction; seizure disorders; sick sinus syndrome; gastrointestinal bleeding; asthma
## Interactions

<table>
<thead>
<tr>
<th>Interactant Drug</th>
<th>Effect of Interaction</th>
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<tbody>
<tr>
<td>Anticholinergics</td>
<td>Decreased effectiveness of anticholinergics</td>
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<tr>
<td>Nonsteroidal anti-inflammatory drugs (NSAIDs)</td>
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Nursing Process: Assessment

• Preadministration assessment
  – The patient’s cognitive and functional ability are assessed before and during therapy
  – Patients are assessed regarding orientation, calculation, recall, and language
  – Assess the patient for agitation and impulsive behavior
  – Obtain complete medical history and history of symptoms of AD from patient, family member, or patient’s hospital records
Nursing Process: Assessment

- Preadministration assessment (cont’d)
  - Observe patient for what appears to be deviations from normal behavior pattern
  - The nurse asks the family about unusual behaviors, such as wandering or outbursts of angry or frustrated behavior
  - Assess patient’s vital signs and weight
Nursing Process: Assessment

- Ongoing assessment
  - Includes both mental and physical assessment
  - Initial assessments will be compared with ongoing assessments to monitor patient’s improvement after taking cholinesterase inhibitors
Nursing Process: Planning

- Expected outcomes include:
  - Optimal response to drug therapy
  - Support of patient needs related to management of adverse reactions
  - Absence of injury
  - Compliance with the prescribed therapeutic regimen
Nursing Process: Implementation

- Promoting an optimal response to therapy
  - Develops care plan to meet patient’s individual needs
  - Monitor for liver damage in patients taking tacrine, from at least week 4 to week 16 after initiation of therapy, after week 16 transaminase levels are monitored every 3 months
Nursing Process: Implementation

- Monitoring and managing patient needs
  - Imbalanced nutrition: Less than body requirements
  - Attention to dosing of medications can be helpful to decrease adverse GI reactions and promote nutrition
  - Remove oral dosing syringe provided in protective container when rivastigmine is administered as oral solution
Nursing Process: Implementation

• Monitoring and managing patient needs (cont’d)

  • Tacrine (Cognex) is administered orally 3 or 4 times a day, preferably on an empty stomach, 1 hour before or 2 hours after meals

  • Patient should be offered a well-balanced diet with foods that are easy to chew and digest

  • Fluid intake of 6 to 8 glasses of water daily is encouraged to prevent dehydration
Nursing Process: Implementation

• Monitoring and managing patient needs (cont’d)

• In later stage, patient may be fed through feeding syringe, or the caregiver can encourage chewing action by pressing gently on bottom of the patient’s chin and on the lips
Nursing Process: Implementation

• Monitoring and managing patient needs (cont’d)
  – Risk for injury
    • Physical decline and adverse reactions of dizziness and syncope place patient at risk for injury
    • Use of side rails; keep the bed in low position; use night lights; frequent monitoring by nurse or caregiver will reduce risk of injury
Nursing Process: Implementation

• Educating the patient and family
  - Explain any adverse reactions that may occur with specific drug and encourage caregiver or family members to contact primary health care provider immediately if serious drug reaction occurs
  - Evaluate patient’s ability to assume responsibility for taking drugs at home
Nursing Process: Implementation

- Educating the patient and family (cont’d)
  - Focus on educating family and major caregiver of patient needs
  - Discuss drug regimen with patient, family member, and/or caregiver
Nursing Process: Evaluation

- Therapeutic effect is achieved
- Adverse reactions are identified, reported to the primary health care provider, and managed successfully through appropriate nursing interventions
- No injury is evident
- Patient, family member, or caregiver demonstrates understanding of the drug regimen