PARKINSON'S DISEASE

the Advocacy Alliance

Health Care Quality Units

Disclaimer

- The information presented to you today is intended to increase your awareness.
- The information is not intended to replace medical advice.
- If you are in need of medical advice, please contact your physician.

Objectives

- The participants will:
  - Have an increased understanding of Parkinson's Disease.
  - Be able to name two different possible treatments.
  - Discuss caregiver strategies that may be used to support individuals with Parkinson's Disease.

What is Parkinson's Disease?

- Named after James Parkinson, who first described it in 1817.
- A neurodegenerative disease caused by the death and destruction of dopamine-producing nerve cells in the brain.

What is Parkinson's Disease?

- When dopamine (an inhibitory neuro-transmitter) production is depleted, nerve cells that control muscles are unable to control movement and coordination.
- By the time symptoms appear, 80% or more of dopamine-producing cells have been lost.
- Normally, there is a balance between dopamine and another neurotransmitter called acetylcholine.

What is Parkinson's Disease?

- Acetylcholine is called an excitatory neurotransmitter because it generally makes cells more excitable.
- As dopamine is depleted, there is a relative excess of acetylcholine.
- Two of the main anti-Parkinson's drug groups are designed to restore balance between dopamine and acetylcholine.

Incidence and Prevalence

- It occurs in all races but is somewhat more prevalent in Caucasians.
- Men are affected slightly more than women.
- Symptoms may appear at any age, but the risk of onset increases after the age of 60.

Risk Factors

- Age
- Heredity
- Sex
- Exposure to pesticides and herbicides
- Reduced estrogen levels

Causes of Parkinson's Disease

- Genetic factors
  - Abnormalities of alpha-synuclein, a protein that accumulates in degenerating neurons
  - Problems with systems in the body that dispose of unwanted proteins
- Environmental factors
- Age-related changes and oxidation
  - Cause increased vulnerability of nerve cells

Causes of Parkinson's Disease

- Medications
  - Some medications, if taken for a long time or in excessive dosages, can cause symptoms of Parkinson's Disease.
    - Include Haldol, Thorazine and Reglan
    - Depakene may also cause some of the features of Parkinson's.
    - Symptoms disappear when the drugs are stopped.

Signs and Symptoms

- Tremors
- Bradykinesia (Slowed motion)
- Rigid muscles
- Impaired balance
- Loss of automatic movements
- Impaired speech
- Difficulty swallowing
- Dementia

If Symptoms Are Present

- If an individual has any of these symptoms, schedule an evaluation by a physician.
- The sooner an evaluation is done, the sooner treatment can begin.
- Getting an accurate diagnosis is the key to starting appropriate treatment.

Evaluation and Diagnosis

- Brain changes that create neurodegenerative diseases such as Parkinson's Disease are microscopic on a chemical level.
- Not visible on MRI or CAT scan of brain
- Doctor will take thorough medical history, then perform comprehensive physical exam.

Evaluation and Diagnosis

- Doctor will ask about presenting symptoms and observe patient walking around room, sitting down, standing up, turning around, etc.
- Doctor may pay particular attention to individual's movement, coordination and balance.
- Doctor will also need to know what medications patient is taking and family medical history.

Treatment Options

- Medications
- Surgery, including electrical stimulation
- Rehabilitation

Medication Therapies

- Levodopa and Carbidopa *(Sinemet)*
  - Levodopa is a natural substance converted into dopamine by the body.
  - Helps reverse many disabling symptoms of Parkinson's.
  - Carbidopa helps Levodopa get to brain and reduces some side effects of therapy.

Medication Therapies

- Dopamine agonists
  - Unlike levodopa, aren't changed into dopamine but cause neurons to act as though sufficient amounts of dopamine were present.
  - Examples are *Parlodel, Apokyn, Mirapex* and *Requip*.
- Selegiline *(Eldepryl)*
  - Helps prevent breakdown of dopamine.

Medication Therapies

- Catechol-O-methyltransferase (COMT) inhibitors
  - Prolong effect of carbidopa-levodopa therapy by blocking enzyme that breaks down dopamine.
- Tolcapone (*Tasmar*)
  - Linked to liver damage and only used in people not responding to other therapies.
- Entacapone
  - In same class as Tolcapone, but does not cause liver damage.
  - Is now combined with carbidopa and levodopa in medication called *Stalevo.*

Medication Therapies

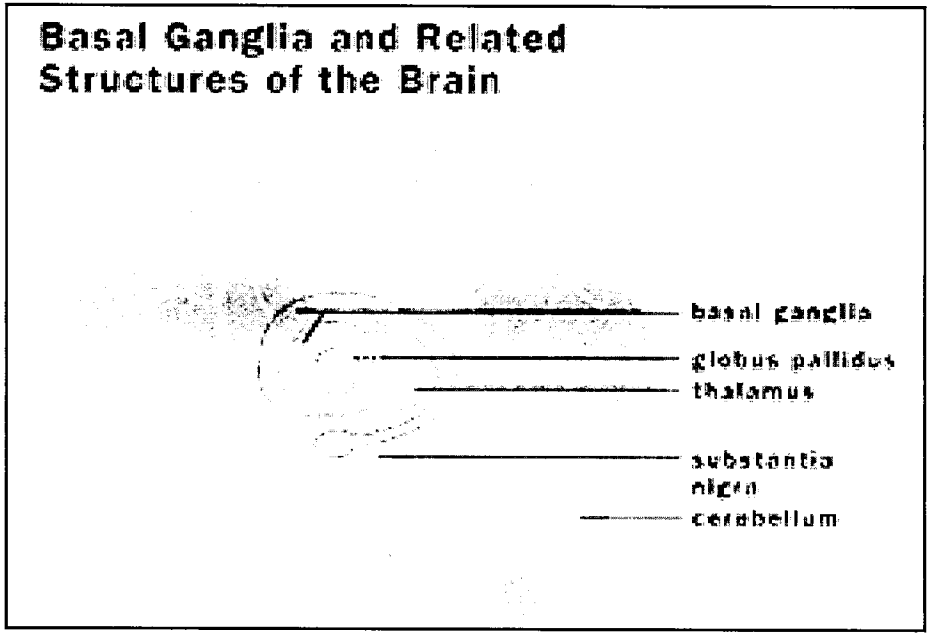
- Anticholinergics
  - Help control tremors in early stages of disease by diminishing acetylcholine.
    - *Cogentin* is an anticholinergic.
    - *Bendryl* and *Elavil* are not anitcholinergics, but have many of the same actions, especially in the elderly.
- Amantadine
  - Antiviral drug that may help with involuntary movements
- Coenzyme Q10
  - Nutritional supplement that may help slow the progression of early-stage Parkinson's disease.
  - Check with doctor before taking.

Surgical Interventions

- Deep Brain Stimulation
  - Brain implant device now widely used to help control many symptoms of Parkinson's Disease.
  - Device is pacemaker-like unit implanted in chest wall, which transmits electric impulses through a wire to tiny electrodes inserted deep within the brain.

Surgical Interventions – Deep Brain Stimulation

- Three possible target sites in brain for placement of the stimulating electrodes.
  - Globus pallidus
  - Subthalamic nucleus
  - Thalamus
- All are small clusters of nerve cells that control movement.



Surgical Interventions – Other Procedures

- Pallidotomy
  - Renewed interest in procedure because improved imaging allows surgeons to pinpoint areas to be treated with greater precision.
  - Electric current used to destroy small amount of tissue in the globus pallidus.
  - May improve many symptoms.
  - Not a cure
  - Risky procedure
- Thalamotomy
  - Involves destruction of small amounts of tissue in thalamus.
  - Rarely done because pallidotomy takes care of broader range of symptoms.

Rehabilitation

- Physical, occupational and/or speech therapy can enhance quality of life.
- Movement strategies can help with walking, moving from one location to another and repositioning in bed in a safe manner.
- Occupational and physical therapists can help individuals find adaptive equipment.
  - Makes tasks easier
  - Helps them maintain independence

Rehabilitation

- Speech therapy
  - Can help individual speak more clearly.
  - Can help individual swallow safely.
- Rehabilitation, in conjunction with medical interventions, can help increase:
  - Endurance
  - Strength
  - General fitness
  - Overall energy
  - Feelings of well-being

What Can I Do To Help?

- Give medications on time.
- Watch for medication side effects.
- Utilize physical, occupational and speech therapies, as needed, to keep individuals functioning as independently as possible.
- Allow individuals adequate time to perform activities of daily living.
- Intervene, as needed, to prevent complications related to immobility, such as constipation, pressure ulcers and contractures.

What Can I Do To Help?

- Maintain a high-fiber diet and adequate fluids (6-8 glasses of water daily), as recommended by doctor to promote bowel health.
- Range-of-motion exercises, as recommended
  - Caregivers should be properly trained by nurse or physical/occupational therapist.

What Can I Do To Help?

- Schedule activities at most convenient and productive times for individual.
  - Don't rush individual.
  - Schedule activities at time of day when individual is most functional.
- Monitor individual's ability to eat and swallow safely.
  - Are they eating enough?

What Can I Do To Help?

- Provide nutrient-dense, high-quality foods to promote good nutrition.
- Focus on individual's strengths, while recognizing that Parkinson's affects the person's body image.
- Encourage individual to speak slowly and clearly.
- Use alternative communication methods such as a communication board.

What Can I Do To Help?

- Assist individuals in staying active.
- Encourage recreational activities that make them think.
- Maintain regular sleep habits.
- Avoid caffeine.
- Weigh individuals regularly and report changes to PCP.

Questions?

- Feel free to ask any questions or make comments.
- We appreciate your feedback.
- Is there anything you would like to know that wasn't covered?
- It is time to do evaluations. Make comments as needed.

Congratulations

You are now ready to take the post-test. Once you have submitted the post-test, you will receive a certificate for completing the course via e-mail or mail. Just make sure all information is entered correctly so you can receive your certificate.