Behavioral Aspects of Parkinson’s Disease

Joseph H. Friedman, MD
Director, Movement Disorders Program
Butler Hospital
Dept of Neurology
Alpert Medical School of Brown University
Disclosures

• Drugs will be discussed with regard to unapproved uses

• Dr JHFriedman has accepted money for consulting: Acadia Pharmaceuticals; research: NIH, MJ Fox;
Parkinson's disease is defined by its motor features but includes several non-motor signs and symptoms as well.
Non-Motor Features of Parkinson’s Disease

• **Somatic**
  - Autonomic (BP; GI; GU; cardiac)
    • Respiratory; rhinorrhea?
    • sweating
  - Sensory (pain, impaired smell)
  - Skin (seborrheic dermatitis)

• **Behavioral**
Quality of Life

• “The clinical factors that showed the highest predictive values for worse health related quality of life were non-motor symptoms such as depression, sleep disorders and fatigue.”

• Qin Z. et al. 2009
It is best categorized as a NEUROBEHAVIORAL Disorder
Its most devastating consequences are BEHAVIORAL
Behavioral

- **Intrinsic**
  - Depression
  - Apathy
  - Dementia
  - Anxiety & Inner tremor
  - Fatigue
  - Sleep
  - Personality
  - Akathisia

- **Iatrogenic**
  - Hallucinosis
  - Delirium
  - Psychosis
  - Hypersexuality
  - Mood Fluctuations
  - Repetitive/compulsive/impulsive behaviors
  - Sleep disorders
Dementia

– Occurs in about 30%, but estimates up to 80%
– “subcortical” phenomenology - memory loss; mental slowing; loss of initiative; passivity; executive dysfunction; mild naming problems; decreased verbal fluency
– Uncertain, “mixed” neuropathology - cortical Lewy bodies; AD changes; increased loss of medially situated neurons in 1 SN; cholinergic loss
– Treatment - role for cholinesterase inhibition
– Associated with increased behavioral problems
What is dementia in PD?

In a nationwide study in Germany, 873 PD patients

MMSE: 17.5% < 25

CDT 41.8% > 2 clock drawing

PANDA 43.6% < 15 PD NP dementia assessm

DSM IV 28.6%

Riedel O et al. J Neurol 2008

“you are what you use”??
Clinical Symptoms of PDD vs AD

Depression

- Affects about 30-50% (4-70%) of PD patients
  - Greater anxiety and less sense of guilt, self reproach and feelings of failure than non-PD depression (same as in RA)
  - Unrelated to drug treatment of PD
Depression (DSM)

Depressed mood most of the day…
Diminished interest or pleasure
Weight loss
Insomnia or hypersomnia
Psychomotor agitation or retardation
Fatigue or loss of energy
Feelings of worthlessness or excessive guilt
Diminished ability to think or concentrate, or indecisiveness
Recurrent thoughts of death
Is depression intrinsic or reactive?

1. Comparative observations +/-
2. Biochemical support (serotonin, NE) +/-
3. Guilt by association (other B.G. disorders)
4. Lack of association with motor impairment, motor benefit of treatment, duration
5. Depression preceding diagnosis of PD (same as in non-neuro chronic diseases)
6. Symptoms similar in PD as in RA depression
7. DBS

Conclusion: the answer is YES.
Anxiety & Internal Tremor

• Anxiety is more common than in other neurological populations (including MS) and affects 25-50%
  – Generalized anxiety disorder
  – Panic attacks
  – Social phobias.
Anxiety core symptoms

Restlessness or feeling keyed up or on edge

Being easily fatigued

Difficulty concentrating or mind going blank

Irritability

Muscle tension

Sleep disturbance (difficulty falling or staying asleep, or restless unsatisfying sleep)
APATHY

- Lack of interest
- Lack of motivation
- Reduction in the usual “highs” and “lows” of normal life
Apathy and PD

Prevalence of 16-50% in PD

Apathy overlaps with anhedonia, depression, executive dysfunction and personality in PD

Apathy overlaps more with depression in PD than in PSP in which depression is less common

Clinically similar to depression (lack of interest, lack of pleasure, social withdrawal)
Fatigue

- Almost half of PD patients suffer from fatigue
- About 1/3 of patients consider fatigue their worst symptom
- Fatigue correlates with depression but is also independent
- Fatigue does not correlate with PD severity, duration, drug use
- May respond to stimulants
- Persists for years
Primary vs secondary fatigue

**Primary**
- energy utilization
- primary brain change
- endogenous "humors"

**Secondary**
- depression
- hopeless/frustrated
- sleep
- apathy
- treatment
Personality

“Rigid”

Introspective

Avoidance of “novelty seeking”

Compulsive

Diligent
Psychosis

• Psychosis
  – delusions or hallucinations almost always present, no disordered thinking unless demented
  – delusions are usually jealous or paranoid
  – occurs in 5-8% of drug treated patients
  – more common in demented or elderly

• Treatment
  – clozapine proven effective; quetiapine ?
Psychosis

- Hallucinosis - hallucinations with retained insight and without psychosis
  - Visual ≥ auditory ≥ tactile
  - Occurs in about 30% of drug treated patients
  - Occurs in 40% if “presence” hallucinations included
  - Occurrence before drug treatment suggests diagnosis of Lewy body disease
Compulsive behaviors

Gambling

Sexual preoccupation

Eating, shopping, spending money

Walkabout

Other and “punding”
Good evening Dr. Friedman, I'm writing to inform you of some recent changes in my father's health both physically and psychologically. He seems to be out of control. He is gambling everyday and yesterday we found out that he has dipped into his retirement funds for more money. He has nothing left and no matter how many times we tell him and show him that he has no more money left, he doesn't comprehend. As hard as my sister tries to keep a small amount in the checking account to pay bills on automatic payment, he takes out that money to spend on gambling and checks and payments have bounced. He is lying to everyone to try to get pity from them and money. He lies and says he has no money for food and we always make sure he has food in the house and we buy him food and gas cards every week. He is driving at night against our wishes and we fear that he is going to harm himself and/or others. Next week we are meeting with a lawyer to see about taking over ALL financial matters of Robert and to take away his drivers license.
Impulse Control Disorder
Akathisia

Definition

- A sense of restlessness forcing the patient to move.
- Poorly studied in PD but found in 43 of 100 consecutive patients in one study (Lang and Johnson).
- Unrelated to the use of levodopa or disease severity.
- May occur in untreated PD.
- Treatment never studied
- Must be distinguished from chorea and RLS
Sleep

Vivid dreams
REM sleep behavior disorder
Insomnia
Excess daytime sleepiness