Parkinson Disease 101

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Major Points

• What is Parkinson disease (PD)?
• What causes it?
• What are the best treatments?
• What is the status of research?
Parkinsonism

• Slow movement (bradykinesia)
• Resting tremor
• Stiffness (rigidity)
• Postural instability (tendency to fall)
Parkinsonism

- Parkinsonism + MSA, PSP, DLB
- Parkinson disease
- Secondary to drugs, strokes, other
- Tremor ↔ slow & stiff
- Young ↔ old
- genetic ↔ environment
Parkinson Disease Variation

blog.bioethics.net/2005/02/

www.fitsugar.com/249421
## Parkinsonism +

<table>
<thead>
<tr>
<th>Condition</th>
<th>Symptoms</th>
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<tbody>
<tr>
<td>Multiple system atrophy (MSA)</td>
<td>Lightheaded, bowel &amp; bladder dysfunction</td>
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<tr>
<td>Progressive supranuclear palsy (PSP)</td>
<td>Early falls, vision complaints</td>
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<tr>
<td>Diffuse Lewy body disease (DLB)</td>
<td>Early dementia, hallucinations</td>
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“Primary PD”

- “Idiopathic PD”
- Tremor at rest
- Slow movement
- Stiffness
- Asymmetric
- Levodopa response
- Lewy body pathology
Common “non-motor” symptoms

- Constipation
- Urinary urgency/frequency
- Light-headedness
- REM sleep behavior (acting out vivid dreams)
- Insomnia
- Apathy/Anxiety/Depression
- Fatigue
- Drooling
- ↓ sense of smell
- ↓ cognition
Parkinson Disease

- **Prevalence**
  - ~200 per 100,000 worldwide
  - 1% of 60-70 year olds

- **Onset**
  - average: 62 years
  - ~7% < age 40

- **Men > Women**
Factors that ↓ PD Risk

- Smoking
- Caffeine
- Ibuprofen
- ↑ Uric Acid

Environmental Risk Factors

- Farming
- **Pesticides**
- Well water
- Rural residence
- Pulp mills
- Industrial agents
Normal gene variations can make you more or less likely to develop PD

- Susceptibility genes
Gene variants
+
Environmental factors
+
Aging
↓
Parkinson disease
Basal Ganglia

- Putamen
- Globus pallidus (lateral part)
- Globus pallidus (medial part)
- Caudate nucleus
- Thalamus
- Subthalamic nucleus
- Substantia nigra
Main Biochemical Abnormality

• Marked dopamine loss

• ~70% dopamine loss before motor symptoms
Treatment Strategy

• Individualized Rx
• Protective vs. symptomatic Rx
• When to start meds
• The less meds the better
• Cocktail vs. 1 med
• Levodopa: yes! But not too much
A new language

• Motor fluctuations: “on time” vs “off time”
• Tremor vs. Dyskinesia
Treatment Strategy

• Exercise!
• Therapy
  • Speech, physical, occupational
• Palliative/supportive care
• Advanced therapy
Annual PD Clinic

- Tracks signs over time and optimizes care
- 2-hour visit (4 half hour appointments)
- Standardized evaluations by physical, occupational and speech therapists recorded
- Each therapist provides recommendations
- PD specialist provider reviews status
Hospital Packet

• National Parkinson Foundation has an “aware in care” kit to get the best care during a hospital stay.

• Can be requested at:
  – www.awareincare.org
  – 1-800-4PD-Info (473-4636)
List of Support Groups in cities across Colorado

• [http://www.parkinsonrockies.org/community/support-groups](http://www.parkinsonrockies.org/community/support-groups)
Research Highlights

• Your participation is vital
• Tremendous progress due to technology advances
• Genetic/molecular testing → targeted Rx
• Progress in other diseases translates to PD
• “Prodromal PD”
Research Opportunities

• University of Colorado
  • 303-724-6351
  • Nicola.haakonsen@ucdenver.edu
• Clinicaltrials.gov
• foxtrialfinder.michaeljfox.org