

How will Parkinson's Disease Affect Me?

The Non-Motor Manifestations of Parkinson's Disease

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Introduction

Features of Parkinson's Disease

Motor

Bradykinesia

Rigidity

Tremor

Postural Instability

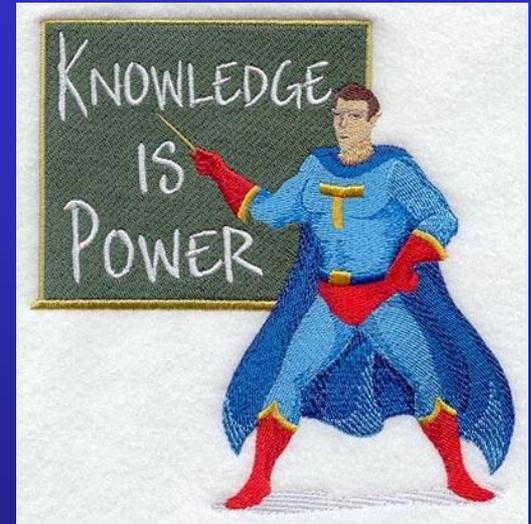
Introduction

Features of Parkinson's Disease

Motor	Non-Motor
Bradykinesia	Alteration in memory, mood, and thinking (neuropsychiatric)
Rigidity	Sleep Disorders
Tremor	Autonomic Symptoms
	Gastrointestinal Symptoms
	Sensory Symptoms
Postural Instability	

Why are we talking about the Non-Motor Symptoms?

- They are not commonly addressed by general neurologists but...
 1. These symptoms can impact your quality of life and can be overlooked
 2. Education can be empowering
 - These symptoms can be treated if addressed!



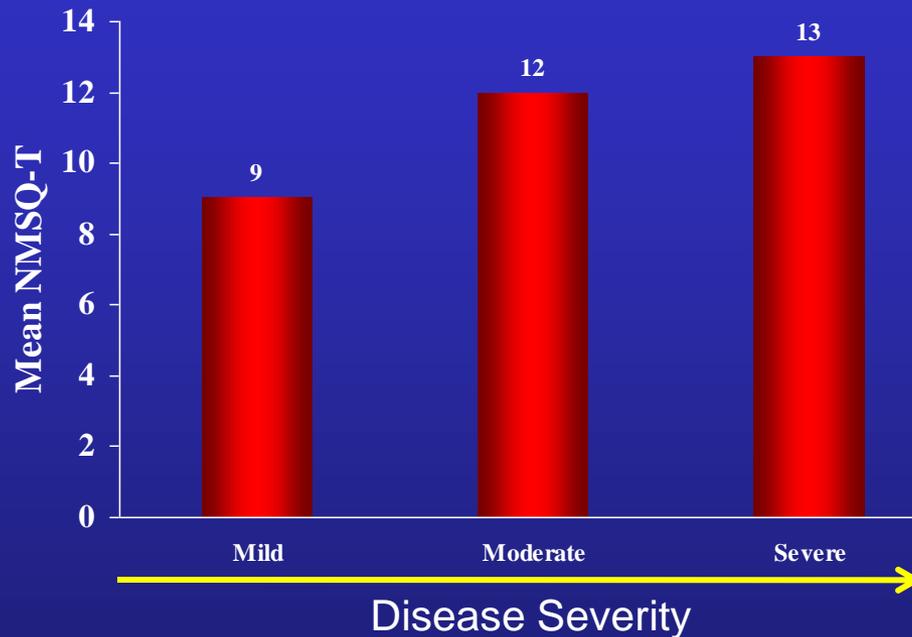
Prevalence of Non-Motor Symptoms

- Studies have established that Non-Motor Symptoms (NMS) occur in over 90% of patients across all stages of disease
 - Not just a sign of “normal aging”

Most Common Nonmotor Symptoms

NMS	Percent
Dribbling of saliva	41.5%
Constipation	52.5%
Urgency	55.8%
Nocturia	61.9%
Memory	44.9%
Concentration	45.7%
Depression	50.1%
Anxiety	45.3%
Insomnia	45.7%

Prevalence of NMS increases with disease stage and duration



Disease Duration (y)	Mean NMSQ-T
< 5	8.5
5-9	10.6
10-14	11.9
≥ 15	12.8

Progression and Natural History

- Studies to define the progression rate of non-motor symptoms are few
- Some symptoms such as excessive daytime sleepiness are thought to progress, other symptoms such as loss of smell and dream enactment behavior may remain static or improve

Gender Differences

Women

- Fatigue
- Anxiety
- Depression
- Constipation
- Restless Legs
- Pain

Men

- Excessive daytime sleepiness
- Drooling
- Sexual dysfunction



Impact of Non-Motor Symptoms

- Non-motor symptoms must be considered when treating Parkinson's disease
 - In fact, in a survey of 163 patients, most patients rated their non-motor symptoms to be more troubling than their motor symptoms

Presentation of Non-Motor Symptoms

- Non-motor symptoms **can precede** the motor manifestations of Parkinson's disease
 - Problems with smell
 - Constipation
 - Depression
 - Sleep disorders



What are the Non-Motor Symptoms?

- Neuropsychiatric Symptoms
- Autonomic Symptoms
- Gastrointestinal Symptoms
- Sleep Disorders
- Sensory symptoms

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What are Neuropsychiatric Symptoms?

- Loss of pleasure/apathy
- Anxiety
- Attention deficit
- Hallucinations/Psychosis/Delusions
- Obsessive behavior
- Dementia
- Depression

Dementia

AN
ESSAY
ON THE
SHAKING PALSY.

CHAPTER I.

DEFINITION—HISTORY—ILLUSTRATIVE CASES.

SHAKING PALSY. (*Paralysis Agitans.*)

Involuntary tremulous motion, with lessened muscular power, in parts not in action and even when supported; with a propensity to bend the trunk forward, and to pass from a walking to a running pace: the

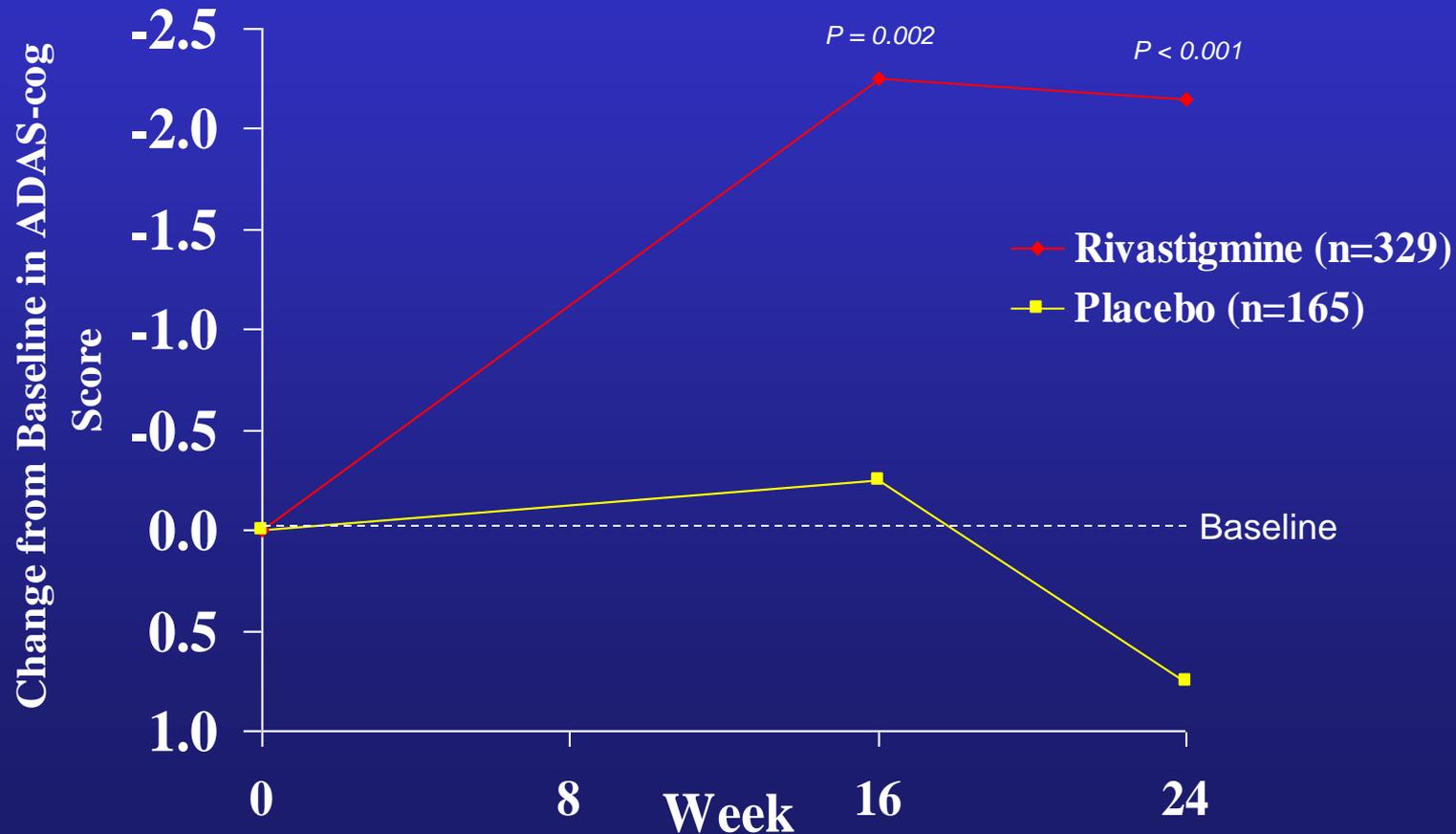
being uninjured.

... the senses and intellects
being uninjured.

Can we treat the dementia?

- A randomized double blind placebo controlled trial of 541 patients compared rivastigmine with a placebo drug

Management – Cholinesterase Inhibitors



Depression

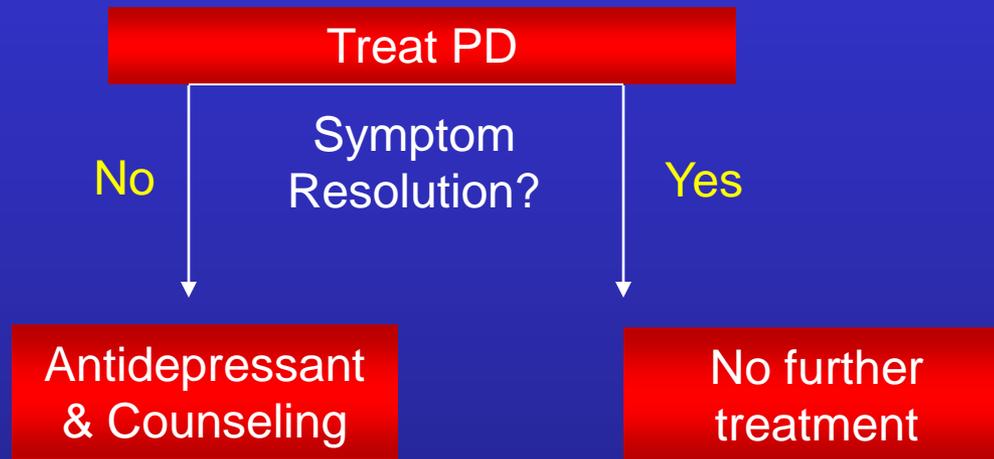
- Affects 10-45% of PD patients¹
- Can precede the motor symptoms in approximately 30% of PD patients¹
- It has been shown that patients are not depressed just because of Parkinson's disease, but from Parkinson's disease²



¹ Ziemssen H. et al. *Parkinsonism and Related Disorders*, 2007.

² Schurmann AG. et al *Neurology*, 2002

Management of Depression



Nonmotor Symptom Complex

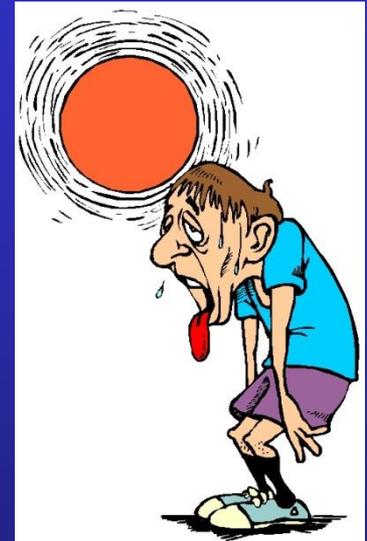
- Neuropsychiatric Symptoms
- **Autonomic Symptoms**
- Gastrointestinal Symptoms
- Sleep Disorders
- Sensory Symptoms

What are Autonomic Symptoms?

- Urination difficulties
- Body temperature dysfunction
- Low blood pressure when standing
- Sexual dysfunction
- Dry eyes
- Constipation

Body Temperature Dysfunction

- During an off period, patients with Parkinson's disease may have profound sweating



Blood Pressure Changes

- In Parkinson's Disease, you may get a drop in blood pressure when you stand.
- This is due to
 - Parkinson's Disease itself
 - Medications
 - Combination of both

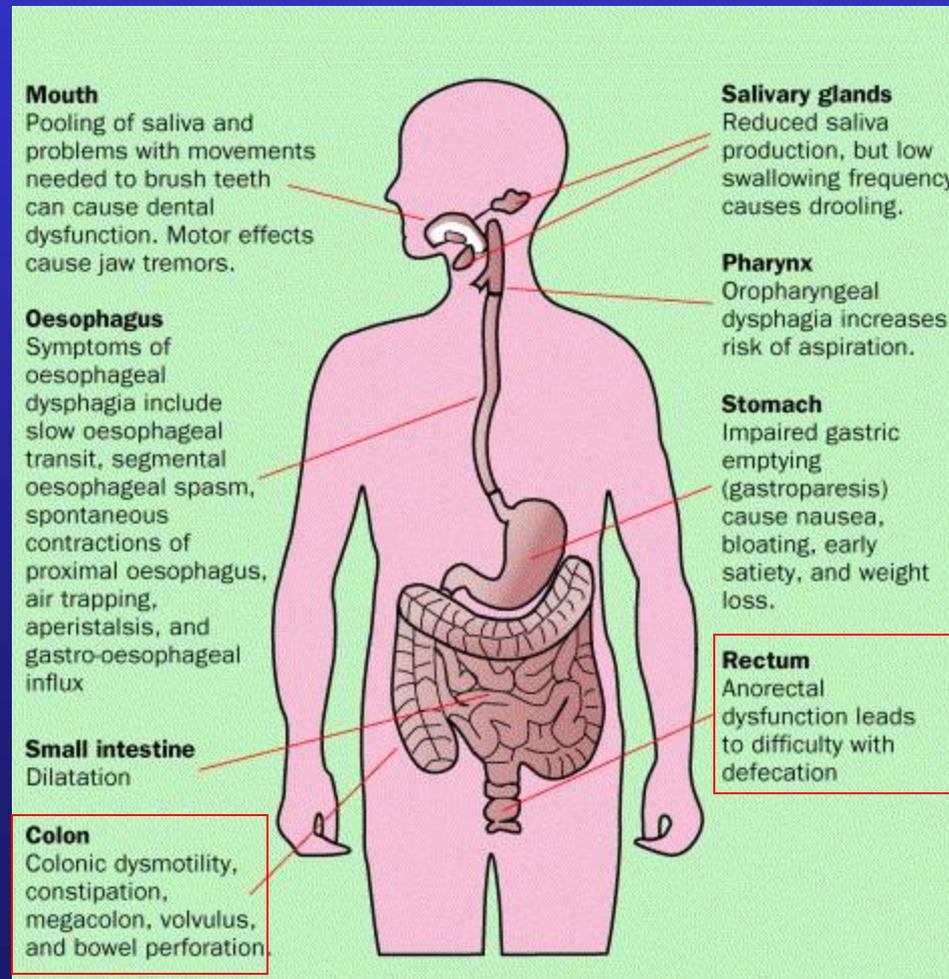
Blood Pressure Changes

- There are treatments for these changes in blood pressure
 - Medication reduction
 - Increase fluid and salt consumption
 - Compression hose
 - Raising the head of bed at night
 - If all this fails, there are medications to increase your blood pressure

Nonmotor Symptom Complex

- Neuropsychiatric Symptoms
- Autonomic Symptoms
- Gastrointestinal Symptoms
- Sleep Disorders
- Sensory Symptoms

Gastrointestinal Symptoms of Parkinson's Disease



Constipation is Common in Parkinson's Disease

- Occurs in between 20-27% of PD patients
- Presumably due to increased colon transit time

Management Strategies of Constipation

Slow Transit Constipation	Anorectal Dysfunction
Increase fluid and fiber intake	Laxatives generally unhelpful
Add stool softener (e.g. colace)	Dopaminergic medication if due to “off state”
Add osmotic laxative or polyethylene glycol (Miralax)	Biofeedback
	Sacral nerve stimulator
	Botulinum toxin

Non-motor Symptom Complex

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- **Sleep Disorders**
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Why am I always so sleepy? (Excessive daytime somnolence)

- What are the causes?
 - Fragmented sleep
 - Restless legs
 - Periodic limb movements
 - Sleep apnea
 - REM Sleep Behavior Disorder
 - Wearing “off” of medications
 - Unable to fall asleep or fall “back asleep”
 - Parkinson’s medications
 - Parkinson’s itself



Sleepiness may be a sign of PD

- Honolulu - Asia Aging study
 - Having EDS was associated with a 3-fold increased risk in development of PD

Managing the Sleepiness

- Get a good night's sleep
 - Practice good sleep hygiene
 - Treat restless legs or REM sleep behavior disorder
 - Optimize Parkinson's medication
 - Sleep study
- If associated with administration of medication
 - Consider reduction or switch to another agent
- If no cause is found and no response to change in therapy
 - Consider stimulants (limited by side effects and insurance coverage)

Nonmotor Symptom Complex

- Neuropsychiatric Symptoms
- Autonomic Symptoms
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Sensory Symptoms

- Changes in vision
- Loss of smell
- Pain
 - Sometimes it is unclear whether due to arthritis or Parkinson's
 - Does it respond to Parkinson's medications?

Summary

- Managing Parkinson's disease means managing more than the tremor
- Nonmotor symptoms can have a profound impact on quality of life
- Need to be addressed !