ARS Question

A 56 y.o. man presents with trouble walking, small hand writing, and a resting tremor.

You make a presumptive diagnosis and suggest:

A. Sinemet trial  
B. Head MRI  
C. Propranolol for essential tremor  
D. Stroke work-up  
E. SSRI for anxiety

Parkinson’s Disease

- Loss of dopaminergic neurons in the substantia nigra
- Lewy bodies
- Differentiate from broader classification of parkinsonism
- Mean age of onset 55yo
Substantia nigra

Normal Parkinson disease

Lewy Body

Brown melanin pigment

Lewy bodies Nerve cell nucleus

Parkinsonism

- Parkinson’s Disease
- Neuroleptic side effect
- Post-encephalitic
- Toxins (Mn, CO, MPTP)
- Dementia
- Wilson’s disease
- Basal ganglia calcifications

- Parkinson-plus syndromes
  - Progressive supranuclear palsy
  - Corticobasal ganglionic degeneration
  - Shy-Drager syndrome
  - Olivopontocerebellar atrophy
  - Diffuse Lewy body disease
Parkinson-plus Syndrome

- Gait problem is early feature
- Rare tremor
- No (or poor) response to Sinemet
- PSP
  - Vertical gaze palsy
- CBGD
  - Asymmetric rigidity
  - Alien limb
  - Cortical sensory
- SDS
  - Auditory
- OPAC
  - Cortical
- DLBD
  - Dementia
  - Hallucinations

PD: Clinical

- Slow progressive course
- 4 cardinal features
  - Resting tremor
  - Bradykinesia
  - Rigidity (cogwheel)
  - Postural reflex impairment
- Other: dementia, depression, autonomic

Facial Masking
**Posture**

**PD: Levodopa**
- Sinemet = carbidopa/levodopa
- Most potent drug for PD
- Preferred treatment age > 75
- Side effects
  - GI
  - Dyskinesias
  - Dementia, hallucinations
  - Orthostatic hypotension
- Start 25/100 QD, increase q 3d up 3 tid as needed

**PD: Dopamine Agonist**
- Act directly on dopamine receptors
- Synergy with levodopa
- Longer T1/2
- Reduced dyskinesias
- Same side effects as levodopa
- Initial treatment age < 65
- 3rd generation options (Mirapex, Ropinirole)
PD: Anticholinergics

- Helpful in tremor
- Adverse effects are common
- Trihexyphenidyl 1mg qd up to 12mg div tid

PD: Amantadine

- Dopaminergic and anticholinergic
- Adverse effects

PD: MAO-B Inhibitors

- Rasagline and Selegiline
- Reduction of motor fluctuations
- May have neuroprotective effects
  » Consider in early onset disease
**PD: COMT inhibitors**

- Block COMT metabolism of levodopa
- Dopaminergic SEs
  - Reduce levodopa by 30%
- Entacapone (Comtan)
- Combination drug
  - Carbipoda/levodopa/entacapone

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**Treatment Flow Chart**

3 OMD 3-OMD Dopamine 3,4-DHPA 3-MT

COMT = catechol-O-methyltransferase
AADC = amino acid decarboxylase
MAO = monoamine oxidase
OMD = O-methyldopa
DHPA = dihydroxyphenylacetic acid
MT = methoxytyramine