

MOVEMENT DISORDERS



Světlana
Skutilová
University
Hospital Brno

DYSFUNCTION OF BG

- Striatum (ncl caudatus + putamen), palidum, ncl subthalamic L., substantia nigra, ncl ruber, ncl basalis Meynerti, ncl accumbens
- A. **HYPOKINETIC- HYPERTONIC SYNDROME**
- **(parkinsonism)**
- limited voluntary movement
- B. **HYPERKINETIC- HYPOTONIC SYNDROME**
- abnormal involuntary movement

IDIOPATIC PARKINSON´S DISEASE

- The **most frequently cause** of parkinsonism (about 70%)
- Chronic slowly progressive neurodegenerative brain disease
- Etiology: ??
- Pathology: neurodegeneration **pars compacta SN**, decreased production of dopamin (less than 50%), deficit in striatum (dopaminergic receptors, responsibility intact , presynaptic disturbance)
- Neuropathologic finding: **Lewy bodies in** neuron cytoplasm primary in SN (**SYNUKLEIN**) + locus coeruleus

- Prevalence - 360 per 100 000

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- Incidence - 18 per 100 000 per year

- **Age of starting - 5. a 6. decenium** : 10% early onset

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- 10% late onset

CLINICAL FEATURES

■ 1. **DOMINANT** MOTOR SYMPTOMS

■ **BRADYKINESIA**

TREMOR (rest, slowly, asymmetric) especially upper limb

■ RIGIDITY (axial muscles, limb flexors)

■ POSTURAL INSTABILITY, gait disturbance

■ Hesitation freezing

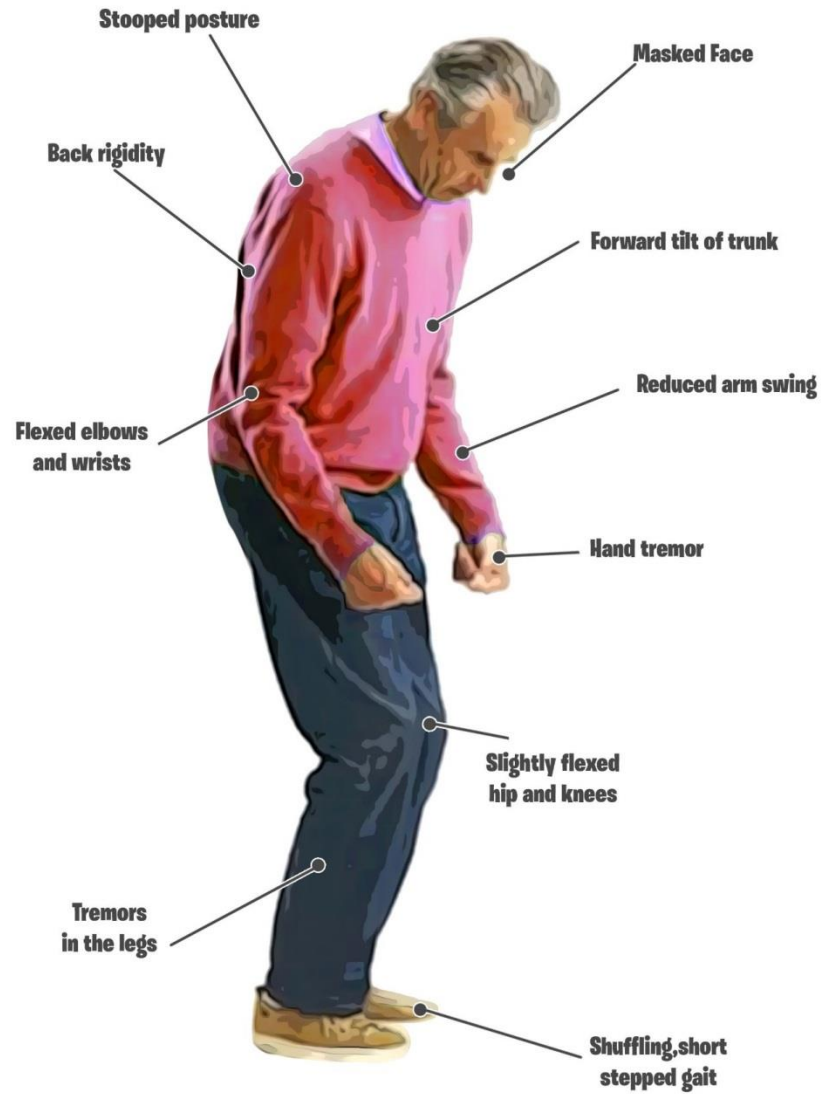
■ Pulse festination

■ 2. **SIDE** MOTOR SYMPTOMS

- Hypomimia
- Hypokinetic Dysarthria Hypofonia
- Micrografia

UPDRS Unified Parkinson disease rating scale

Parkinson's Disease Symptoms



■ 3. **NON-MOTOR SYMPTOMS**

- A) **MENTAL Disturbance** : ncl b. Meynerti
- **depression, anxiety 50%**
- **Executive cognitive dysfunction**
- **Wild dreams..(pseudo)halucination..psychosis (side effect of antiparkinsonian drugs !)**

- B) **SENSORIC Disturbance:**
- **Olfactorial dysfunction**

- C) AUTONOMIC SYMPTOMS : ncl dorsalis vagi
- Constipation
- Urinary urgency
- Sialorrhoea
- Hyperhidrosis
- Dysfagia
- Ortostatic hypotension
- Sleep disturbance, daily sleeping

LATE STADIUM

- + motor fluctuation (on-off state)
- + dyskinesias (chorea, dystonia)
- + **dementia PDD (40%)**

DIAGNOSTIC

■ A. CLINIC NEUROLOGIC EXAM!

UPDRS Unified Parkinson disease rating scale

■ We do not need.....



■ Hemiparkinsonism

■ Diagnostic-treatment test (**DOPARESPONSIBILITY**)

■ (750mg -1g 2 months)

■ **B. NEUROIMAGING**

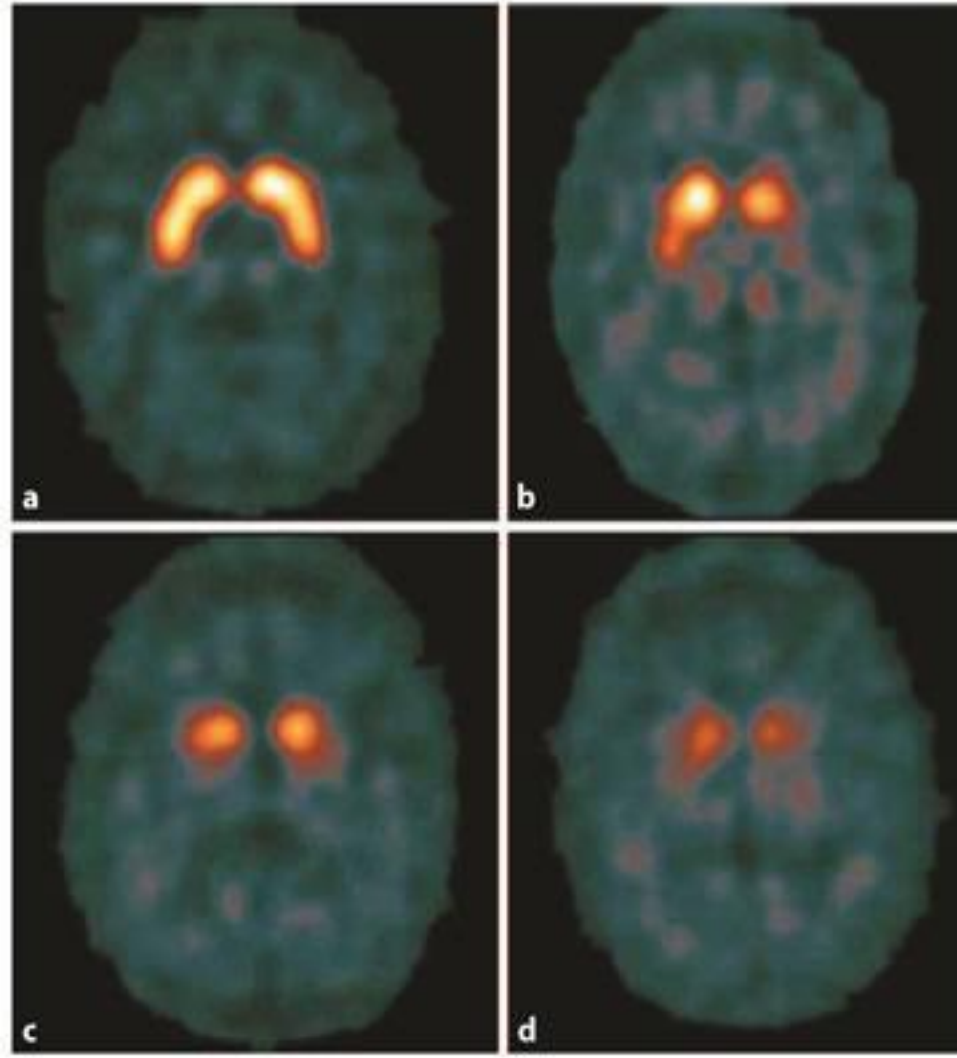
1. Brain DAT SCAN

■ 2. Brain MRI

■ 3. (Transcranial duplex sono)

DAT SCAN

- Expensive
- Binding radionuklid
- on **presynaptic**
- ending
- nigrostriatal
- neurons



TREATMENT OPTIMAL IN SPECIALIZED SURGERY

- NO CURE
- NO STOP
- **SYMPTOMATIC** (substitution of dopamin) - **significant reduction** of troubles
- NO Neuroprotectiv drug
Individual (age, another illness, cognitive function..)
- Strategy ... early contra late stadium

FARMAKOTHERAPY

EARLY STADIUM

■ DA - AGONIST

■

■

■ PRAMIPEXOL

■ ROPINIROL

■ ROTIGOTINE

■

■

■

■

HONEY MOON.....

L-DOPA

dopamin prekursor

penetration H-E barrier

DOPA-dekarboxylasa

ISICOM

NAKOM

MADOPAR

SINEPAR (retard)

FARMAKOTHERAPY

LATE STADIUM

- **1. MONOTHERAPY L-DOPA** (DuoDopa)
- or
- **2. INHIBITORS COMT - ENTACAPON**
- Blockade of enzyme COMT increase level of L-Dopa
STALEVO (**L-Dopa + entacapone**)

- **(3.) AMANTADINE-** VIREGYT K, PK-MERZ
- Antagonist NMDA receptors, increase level of dopamin in synapsy
- I: choreatic dyskinesias

- **DEMENTIA TREATMENT:** ACETYLCHOLINESTERASE INHIBITORS
- Donepezil - ARICEPT, KOGNEZIL
- Rivastigmin- EXELON (Caution ex py AE)
- Galantamin - GALANTAMIN

- **PSYCHOSIS TREATMENT:**
- **Reduction** of antiparkinson drugs – only **monotherapy L-Dopa**

- **ATYPICAL!** Neuroleptic drugs – Quetiapin, Tiaprid
- (do not block DA receptors in striatum)
- Typical n. – risk of akinetic crisis or neuroleptic malignant syndrome)

- Refractory tremor - BTX

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DO **NOT** prescribe **anticholinergic** drug (Akineton)

- **Caution ! sudden take off drug**

- Lowprotein diet

NEUROSURGICAL THERAPY

- **DBS** ...(Deep Brain Stimulation)
- functional stereotactic operation
- Bilateral electric stimulation from 1 neurostimulator (PM)
- TARGET: **STN** (ncl.subthalamicus) VIM thalamus Palidum
- Contraindication: age (more than 70)
- serious depression
- dementia
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- BENEFIT : reduction of antiparkinson drug
- reduction of motor fluctuation

