

Advances in Management of Parkinson's Disease: a holistic approach

Dr. Y.Y. Anne Chan

Fellow, Division of Neurology

Medicine & Therapeutics, Prince of Wales Hospital



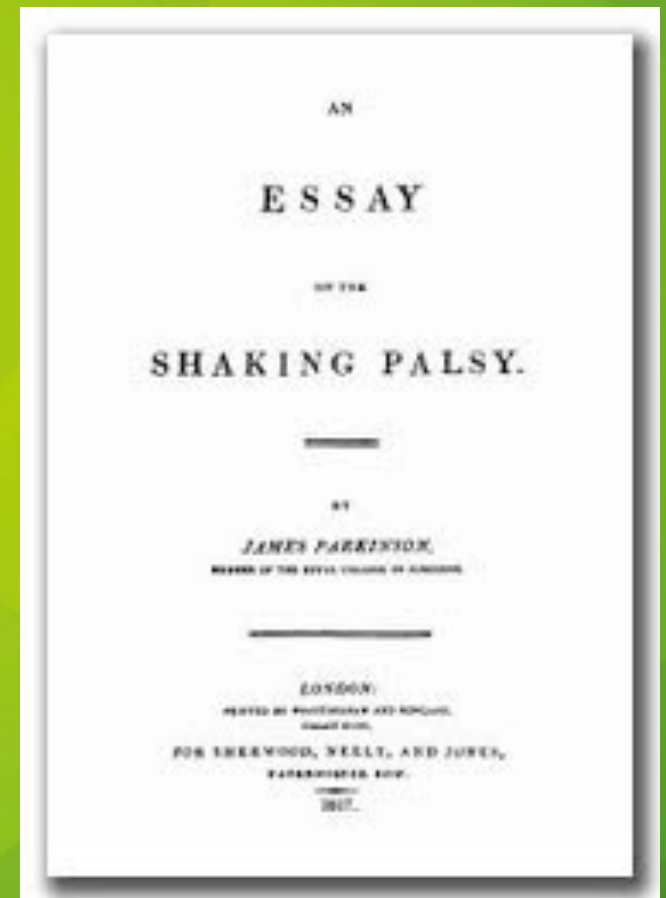
What is Idiopathic Parkinson's Disease?

- Neurodegenerative disease (慢性腦神經組織衰退疾病)
- dopamine neuronal loss in Substantia nigra (腦幹內稱作「黑質」的部位出現退化)



Cardinal signs of PD

- Resting tremor (震顫)
- Bradykinesia (動作遲緩)
- Rigidity (僵硬)
- Postural instability (平衡困難)
- Good response to L-dopa



Medical therapy

MAO-B inhibitor (單胺氧化酶抑制劑)

Dopamine agonist (多巴胺催動劑)

L-dopa (左旋多巴)

Amantadine (金剛烷胺)

COMT inhibitor/ combination with L-DOPA (兒茶酚-O-甲基轉移酶抑制劑)

MAOB Inhibitors (單胺氧化酶抑制劑)



1. Selegiline (司來吉蘭) ~5-10 mg daily

- Monotherapy at early stage of disease
- Enhance action / prolong duration of levodopa
- Take in morning / early afternoon due to stimulant effects
- Avoid concomitant use with SSRI (due to serotonin syndrome, delirium, rigidity, hyperthermia, hypertension)

2. Rasagiline (雷莎吉蘭) ~1mg daily

- More potent than selegiline;
- Mild neuroprotection effect

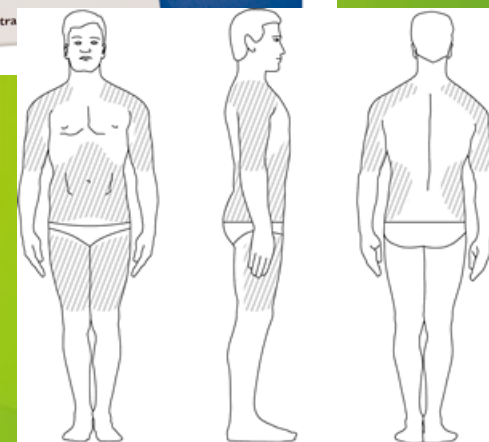
Dopamine agonist (多巴胺催動劑)

Pramipexole (普拉克索)

Ropinirole (羅匹尼羅)

Rotigotine (羅替高停)

Apromorphine (阿樸嗎啡)



L-dopa (左旋多巴)

- **Sinemet = Levodopa (左旋多巴) + Carbidopa(卡比多巴)**
兩種成份
- **Madopar = Levodopa (左旋多巴) + Benserazide**兩種化學成分

Sinemet (息寧)

- Standard preparation – 100/25, 250/25
- Slow release – 200/50 (longer duration, but more erratic absorption; less side effects for elderly)



Madopar (美多巴)

- Capsules – 100/25
- Tablet – 200/50
- HBS capsules – 100/25
- Dispersible – 100/25 (quicker onset)



Remarks

- Best effect with empty stomach (protein free, but may have more side effects)
- Nausea, vomiting, dizziness - hence slow titration; add domperidone (peripheral DA antagonist)
- Increase dyskinesia (不隨意運動)
- Confusion / visual hallucinations

COMT inhibitor/ combination with L-DOPA (兒茶酚-O-甲基轉移酶抑制劑)

Entacapone (COMTAN) COMT inhibitors (200mg per tablet)

- to be taken with levodopa; monotherapy has NO effects
- orange discoloration of urine
- May cause dyskinesia, hence may need to reduce dose of levodopa

Stalevo = sinemet plus COMTAN (e.g. 100/25/200mg)

Entacapone (Comtan) (恩他卡明)



用途

-抑制COMT (Catechol-O-methyl transferase) 酵素
而減少左旋多巴代謝所帶來的損失，

-> 增加左旋多巴左腦中的數量，

-> 延長了左旋多巴的臨床使用效果

-輔助治療與左旋多巴共用

Amantadine (金剛烷胺)



Amantadine (an antiviral agent; 200mg daily to 200mg bd)

- helps in extrapyramidal symptoms (治療帕金森症或由藥物引發的錐體外系症狀)
- Higher dose (300mg to 400mg daily) may have anti-dyskinetic effect

Case 1



- 55/M
- AdLi
- Good past health
- Right sided tremor and rigidity for one year

Table 7.1 Options for initial pharmacotherapy in early PD

	First-choice option	Symptom control	Possible risk of side effects	
			Motor complications	Other adverse events
Levodopa	✓	+++	↑	↑
Dopamine agonists	✓	++	↓	↑
MAOB inhibitors	✓	+	↓	↑
Anticholinergics	×	Lack of evidence	Lack of evidence	Lack of evidence
Beta-blockers	×	Lack of evidence	Lack of evidence	Lack of evidence
Amantadine	×	Lack of evidence	Lack of evidence	Lack of evidence

+++ = Good degree of symptom control.
 ++ = Moderate degree of symptom control.
 + = Limited degree of symptom control.
 ↑ = Evidence of increased motor complications/other adverse events.
 ↓ = Evidence of reduced motor complications/other adverse events.

NICE Guideline, Queen Square

Case 2



- 56/F
- Lives with husband
- Walk with assistance indoor
- Use wheelchair outdoor
- Over 10 yrs history of Parkinson's Disease with freezing gait and wearing OFF

Table 7.4 Options for adjuvant pharmacotherapy in later PD

Adjuvant therapy for later PD	First-choice option	Symptom control	Possible risk of side effects	
			Motor complications	Other adverse events
Dopamine agonists	✓	++	↓	↑
COMT inhibitors	✓	++	↓	↑
MAOB inhibitors	✓	++	↓	↑
Amantadine	×	NS	↓	↑
Apomorphine	×	+	↓	↑

+++ = Good degree of symptom control.
 ++ = Moderate degree of symptom control.
 + = Limited degree of symptom control.
 ↑ = Evidence of increased motor complications/other adverse events.
 ↓ = Evidence of reduced motor complications/other adverse events.
 NS = Non-significant result.

Case 3

- 60/M
- Right sided tremor, rigidity and postural instability for 15 years
- motor complications with OFF dystonia, delay ON, peak dose dyskinesia
- he also complained of pain and numbness over limbs and body with insomnia

Motor complication

problems

- Wearing off or Freezing of gait
- Delay ON
- Peak dose dyskinesia
- Dystonia

tx

- Increase L dopa or DA or add comtan
- Add madopar dispersible
- increase L dopa freq, decrease comtan, add amantidine
- Increase L dopa or Botox injection

Non motor symptoms

problems

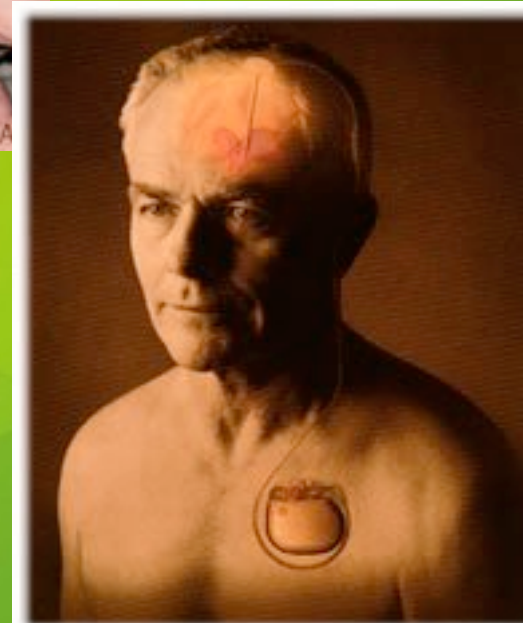
- RBD
- hypersalivation
- Depression
- Numbness
- Hallucination
- Cognitive decline
- Autonomic dysfunction
- constipation

tx

- Clonazepam
- Botox injection
- SSRI
- TCA or gabapentin
- Quetiapine
- Exelon
- Fludrocortisone
- laxatives

Solutions for dyskinesia

- Medical titration
- Apomorphine infusion
- Deep brain stimulation
- Duodopa



Thank you

