

New Medicine Service

A FOCUS ON PARKINSON'S DISEASE



Learning for this session

- ▶ Summary of the New Medicine Service
- ▶ Recap on Parkinson's disease
- ▶ Overall management of Parkinson's disease
- ▶ Key information on each medicine category
- ▶ Key counselling points
- ▶ Clinical case study
- ▶ Further reading and signposting

A large magnifying glass with a gold-colored frame and a light blue lens. The word 'Objectives' is written in a large, dark blue, serif font across the lens.

Objectives

NMS - Summary

- ▶ **Patient consent and other data requirements**
- ▶ **Catch up NMS - between 1st September 2021 and 31st March 2022.**
- ▶ **Targets for payment**
 - ▶ All completed NMS provided by a contractor that fall below the 10% target will be paid at £20 each;
 - ▶ Once a contractor reaches the 10% target all completed NMS (including those which fall below the 10% target) will be paid at £25 each;
 - ▶ Once a contractor reaches the 20% target all completed NMS (including those which fall below the 20% target) will be paid at £26 each;
 - ▶ Once a contractor reaches the 30% target all completed NMS (including those which fall below the 30% target) will be paid at £27 each;
 - ▶ Once a contractor reaches the 40% target all completed NMS (including those up to the maximum target) will be paid at £28 each.



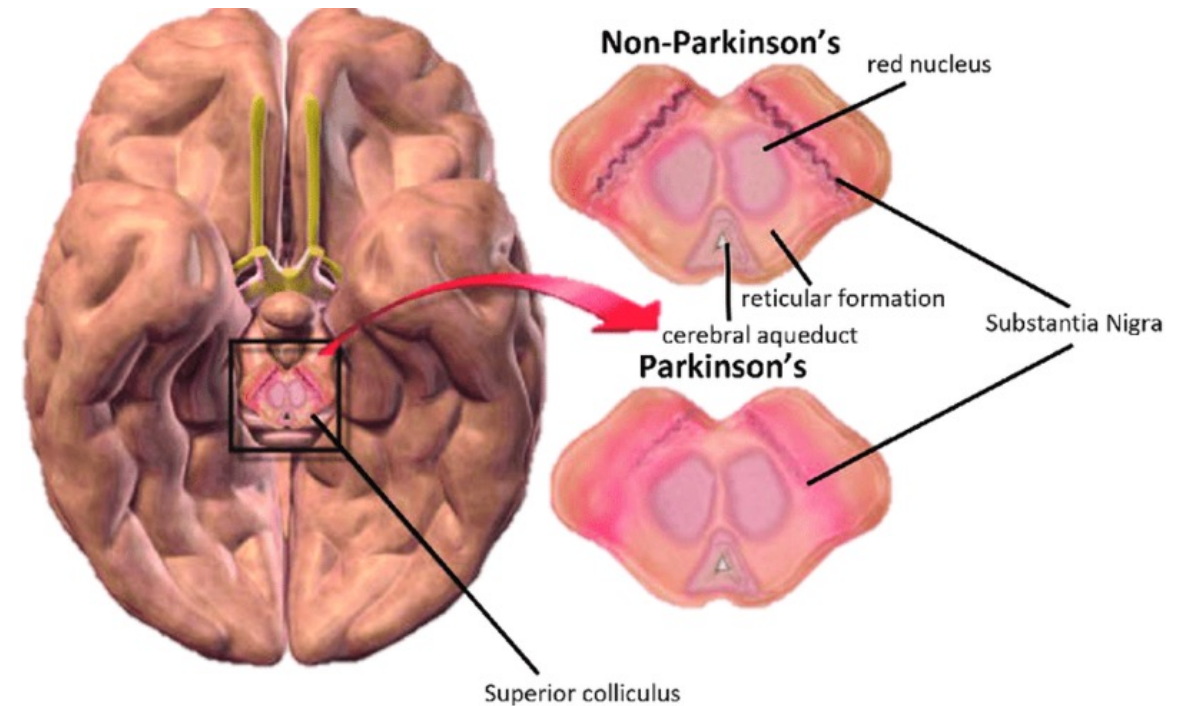
The condition and clinical features

- ▶ PD is the second most common neurodegenerative condition after Alzheimer's disease
- ▶ Lewy body inclusions accumulate in brain stem, substantia nigra and cortex
- ▶ Prevalence 160 per 100,000 in UK.
- ▶ Incidence ~ 13 per 100,000 per year but rises with age
- ▶ 2% of those over 80, 10% of people in nursing homes



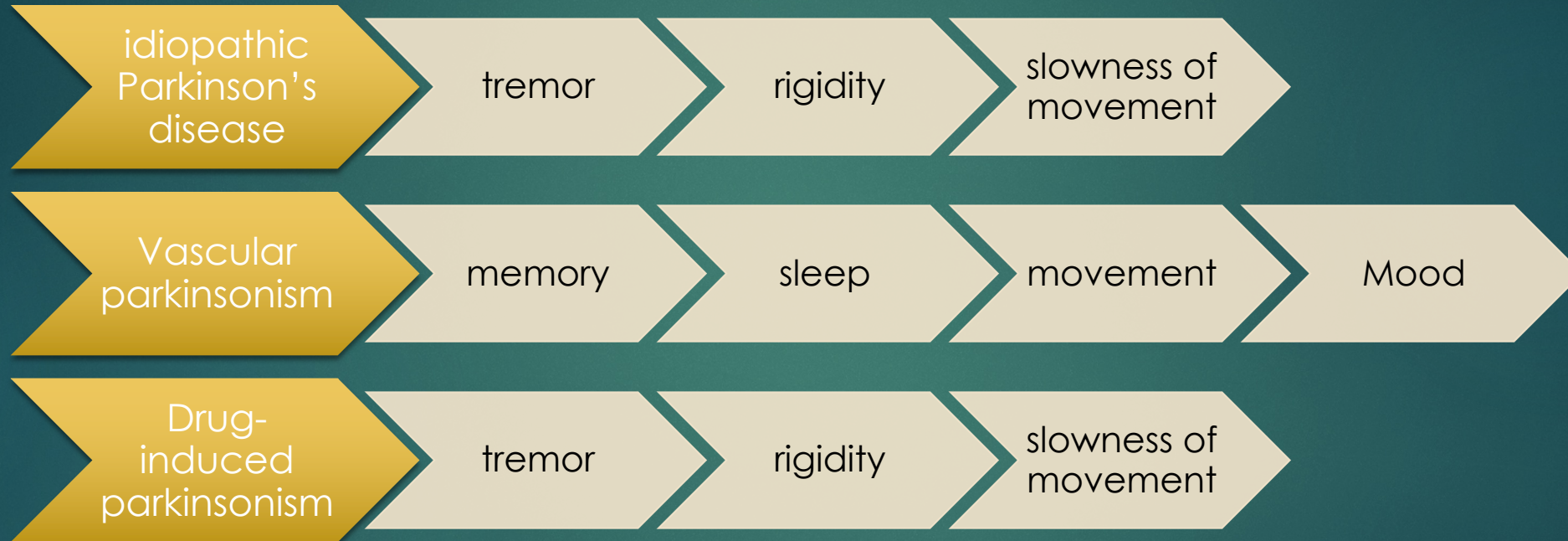
The condition

- ▶ Parkinson's disease (PD) is a neurodegenerative disorder
- ▶ Affects predominately dopamine-producing (“dopaminergic”) neurons in a specific area of the brain called substantia nigra.
- ▶ Debilitating symptoms such as rigidity and tremors.



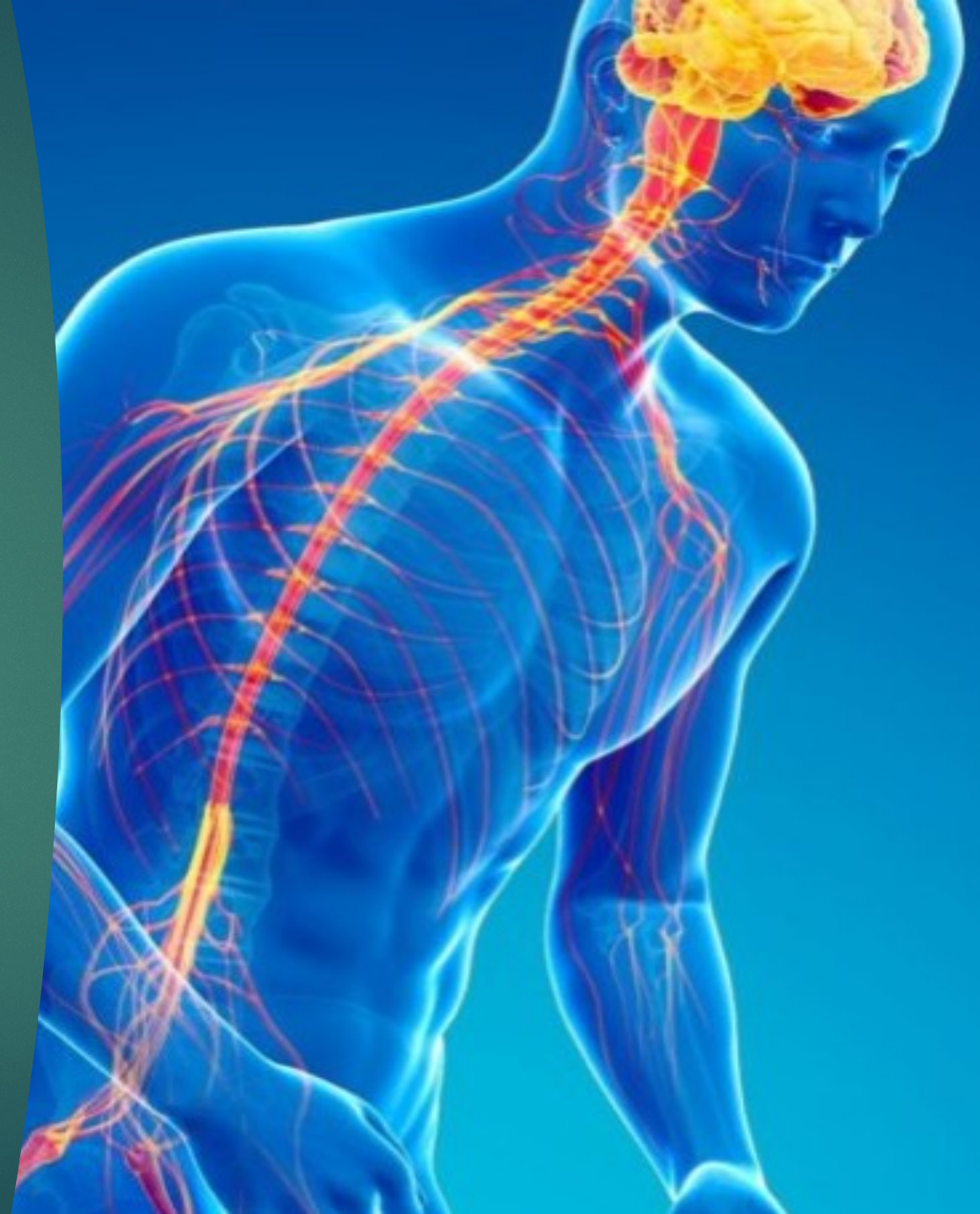
The condition

There are three main forms of parkinsonism



Clinical features

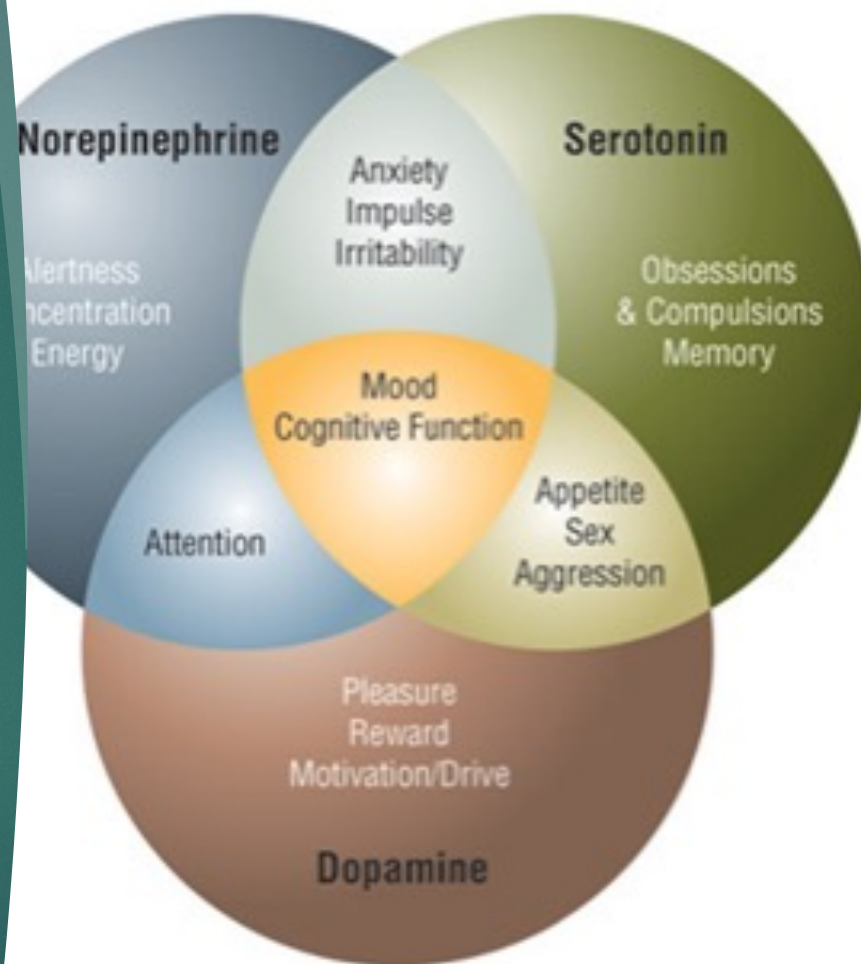
- ▶ Tremor
- ▶ Slowed movement (bradykinesia)
- ▶ Rigid muscles
- ▶ Impaired posture and balance
- ▶ Loss of automatic movements
- ▶ Speech changes
- ▶ Writing changes



Clinical features

► Non-motor manifestations of PD

- Depression (up to 60%)
- Dementia (up to 75%)
- Sleep disorders
- GI disturbance
- Restless legs
- Pain
- Postural hypotension
- Urinary problems



Risk factors



The management

► NICE

Guidance <https://www.nice.org.uk/guidance/ng71>

► BNF <https://bnf.nice.org.uk/treatment-summary/parkinsons-disease.html>



Parkinson's treatments

Levodopa	Dopamine agonists	MAOB-inhibitors	Amantadine	COMT inhibitors
Madopar	Non-ergoline ropinerole	selegiline		entacapone
Sinemet	Non-ergoline pramipexole	rasagiline		tolcapone
	Non-ergoline rotigotine			Stalevo
	Non-ergoline Apomorphine			
	ergoline Bromocriptine			
	ergoline Cabergoline			

The medicines - Levodopa

Used in early stages

Used in late stages with other Parkinson's meds

lowest dose

Levodopa + benserazide

Levodopa + carbidopa dispersible

Optimise timings

Slow release through the night

More improvement in motor symptoms

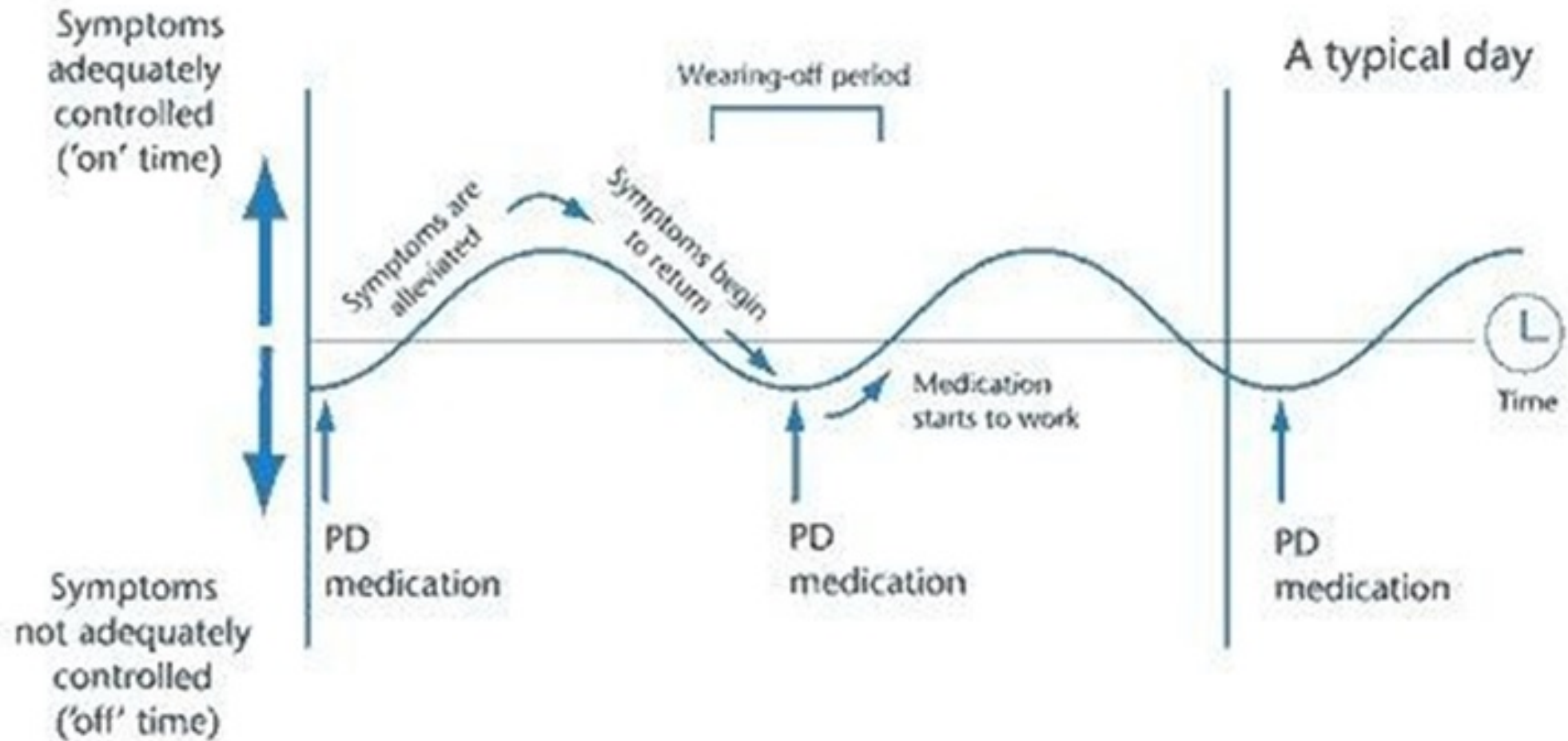
More improvement in activities of daily living

More motor complications

Low blood pressure, nausea, confusion, dyskinesia

often have fluctuating symptoms of PD described as "on" and "off" episodes.

Typical Pattern of How Levodopa Medication “Wears-Off” During the Day



The medicines - Dopamine agonists



two main categories of DA medications, ergoline and non-ergoline.

Imitates the actions of dopamine

Pramipexole, Ropinirole, Rotigotine used widely

useful for early treatment especially in people less than 60 years old

extended release formulations

fewer movement-related side effects

side effects including compulsive behavior and other mental health problems

can cause withdrawal syndrome if stopped abruptly

Side effects include drowsiness, dizziness, increase heart rate, confusion, runny nose

The medicines - Amantadine



Amantadine is a weak dopamine agonist with modest antiparkinsonian effect

100 mg capsules; 100 mg tablets, 50mg/5ml syrup

Immediate Release

rescue for sudden off periods or as continuous infusion

monotherapy or adjuvant therapy to levodopa

100 mg daily for 1 week, then increased to 100 mg twice daily

acts within a few days but may appear to lose efficacy within a few months of continuous treatment

Abrupt discontinuation may exacerbate Parkinsonism

has anticholinergic effects

Slow release products in the USA

The medicines - MAOB- inhibitors



Monoamine Oxidase Type B (MAO-B) is an enzyme that breaks down dopamine

provide some benefit for the motor symptoms

Selegiline, Rasagiline

monotherapy or adjuvant therapy to levodopa

may reduce the motor fluctuations

More improvement in activities of daily living

Fewer motor complications

Rasagiline is about 10 times more potent in the inhibition of MAO-B than selegiline

Mild nausea, Dry mouth, Lightheadedness, Constipation, Confusion, Hallucinations

risk of raising blood pressure with tyramine foods

The medicines - **COMT** inhibitors



Inhibit Catechol O-Methyl Transferase

Reduce breakdown of levodopa

Smoother blood levels, reduced response fluctuations

Tolcapone – rare fulminant liver failure, avoid in liver disease, monitor LFTs

Entacapone – LFTs not necessary

Watch for diarrhea; reduce Sinemet dose 1/3

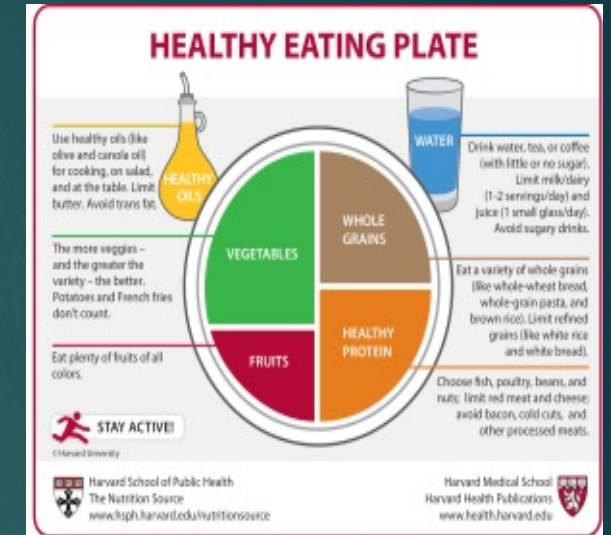
Allows for enhancing medication WITHOUT increasing Levodopa

Nausea and vomiting [Initially], Postural hypotension, Wearing off, daytime drowsiness



Self-help counselling points

- Parkinson's disease nurse specialist interventions
- Physiotherapy and physical activity
- Occupational therapy
- Speech and language therapy
- Nutrition
- **Are they taking medication as directed?!**
- Timing of medication very important for levodopa drugs
- Polypharmacy



SPEECH
LANGUAGE
THERAPY



Consequences of poor adherence

- ▶ • Increased anxiety
- ▶ • Reduced motor function
- ▶ • Exacerbates motor and cognitive symptoms
- ▶ • Loss confidence self and clinicians
- ▶ • Vicious circle
- ▶ • Reduced rehabilitation potential
- ▶ • Delayed discharge
- ▶ • Time to regain previous function (if able to regain baseline)
- ▶ • Reduced confidence in self
- ▶ • COST!



Clinical case study



78-year-old man with advanced Parkinson's disease who has been diagnosed with PD and is experiencing symptoms associated with the preliminary stages of the disease, such as resting tremor and balance issues. The patient presents you with a prescription for Levodopa + benserazide

What side-effects will you discuss with the patient?

What self-help will you advise?

You contact the patient after one week and he tells you that he has started the Levodopa + benserazide and is suffering dizziness, movement stopping and problems with speech

How do you respond?

Two weeks later, at the next NMS session, he says that he is feeling a little better but wants to know about other medicines available

What do you recommend?

Further reading and signposting

- ▶ Parkinson's Foundation <https://www.parkinson.org/>
- ▶ <https://www.michaeljfox.org/news/support-groups>
- ▶ NHS <https://www.nhs.uk/conditions/parkinsons-disease/>
- ▶ <https://www.nice.org.uk/guidance/ng71>



Bibliography/References

- ▶ <https://www.labiotech.eu/trends-news/axovant-parkinsons-disease-gene/>
- ▶ <https://parkinsonsdisease.net/medications/mao-b-inhibitors>
- ▶ <https://www.michaeljfox.org/news/support-groups>
- ▶ <https://www.parkinson.org/understanding-parkinsons/what-is-parkinsons>
- ▶ <https://bnf.nice.org.uk/drug/amantadine-hydrochloride.html#drugAction>
- ▶ https://www.physio-pedia.com/Parkinson%27s_Disease:_A_Case_Study



Clinical case study



78-year-old man with advanced Parkinson's disease who has been diagnosed with PD and is experiencing symptoms associated with the preliminary stages of the disease, such as resting tremor and balance issues. The patient presents you with a prescription for Levodopa + benserazide

What side-effects will you discuss with the patient? These could be dizziness, loss of appetite, diarrhoea, dry mouth and throat pain, constipation, forgetfulness or confusion

What self-help will you advise? Make sure the patient understands the timing of their doses and that all the medicines are taken correctly. Ensure they have joined some support groups.

You contact the patient after one week and he tells you that he has started the Levodopa + benserazide and is suffering dizziness, movement stopping and problems with speech

How do you respond? This is normal in the early stages of treatment. If the 'off' movement is particularly troublesome then their prescribe may prescribe another drug to counteract this

Two weeks later, at the next NMS session, he says that he is feeling a little better but wants to know about other medicines available

What do you recommend? There are many other medicines that can be used in conjunction with Levodopa. The patient should talk to their Parkinson's nurse or GP