



Table 6: Brief characteristics of the major pharmacological agents used in Parkinson's disease.

Drug	Dose	Usage	Common side effects
Levodopa + decarboxylase inhibitor	Initially, one-half 100/25 tablet bid or tid. Increase by half a tablet/day every 4–7 days. As dosage increases, substitute 250/25 tablets or controlled-release formulation. Maximum levodopa dose, 2000 mg/day	Improves most symptoms of PD	<ul style="list-style-type: none"> • Nausea, vomiting, anorexia • Dizziness, postural hypotension • Dyskinesias, choreaform, dystonic and other involuntary movements • Mental changes including nervousness, paranoid ideation, hallucinations, psychotic episodes
COMT inhibitors			
Entacapone (peripheral action only)	200 mg with every levodopa dose up to 1600 mg entacapone daily	Reduces predictable motor fluctuations, less 'off' time	<ul style="list-style-type: none"> • Nausea, vomiting, constipation, diarrhoea • Hypotension, headache • Dyskinesias • Sedation
Tolcapone (peripheral and central action)	Fixed 100–200 mg tid	Reduces predictable motor fluctuations, less 'off' time	<ul style="list-style-type: none"> • Nausea, vomiting, severe diarrhoea occurring 6–8 weeks post-initiation, increased LFTs • Dyskinesias, sedation, hypotension, headache • Liver function monitoring required
Dopamine agonists			
Bromocriptine (ergot alkaloid)	Initially: one-half of a 2.5mg tablet bid with meals. Increase every 14 to 28 days by 2.5 mg/day. Therapeutic dose range 2.5–15 mg/day	As effective as levodopa; less likely to cause dyskinesias; longer half-life reduces motor fluctuations	<ul style="list-style-type: none"> • Nausea • Dyskinesia • Hallucinations, confusion • Postural hypotension
Pergolide (ergot derivative)	Initially: 0.05 mg/day for 2 days. Increase every third day by 0.1 to 0.15 mg/day over 12 days. Therapeutic dose range 0.75–3 mg/day in divided doses tid	As effective as levodopa; less likely to cause dyskinesias; longer half-life reduces motor fluctuations	<ul style="list-style-type: none"> • Nausea, constipation, diarrhoea, dyspepsia • Dyskinesia, hallucinations • Somnolence, insomnia



Drug	Dose	Usage	Common side effects
Pramipexole (Non-ergot)	Initially: 0.125 mg tid. Titrate slowly every 5–7 days in 0.125 mg or 0.25 mg tid increments. Therapeutic dose range: monotherapy 1.5– 6 mg/day; adjunct 0.375–4.5 mg/day	As effective as levodopa; less likely to cause dyskinesias; longer half-life reduces motor fluctuations	<ul style="list-style-type: none"> • Similar to bromocriptine although orthostatic hypotension is uncommon
Ropinirole	Initially for monotherapy and adjunct 0.25 mg tid. Increase by 0.25 mg tid at weekly intervals over 4 weeks. Therapeutic dose range 3–9 mg/day. Doses above 24 mg/day have not been investigated. As adjunct to levodopa, levodopa may be reduced gradually by about 20% in total	As effective as levodopa; less likely to cause dyskinesias; longer half-life reduces motor fluctuations	<ul style="list-style-type: none"> • Nausea • Dizziness, postural hypotension, fainting • Somnolence, confusion, hallucinations
Cabergoline	Initially: 1 mg/day given once daily. Increase in increments of 0.5–1 mg at weekly (initially) or bi-weekly intervals. Slow titration – long half-life. Therapeutic dose range 2–6 mg/day	As effective as levodopa; less likely to cause dyskinesias; longer half-life reduces motor fluctuations	<ul style="list-style-type: none"> • Nausea, vomiting, dyspepsia, • Dyskinesia, hallucinations, confusion • Dizziness, postural hypotension
Lisuride	Initially: 0.2 mg at bedtime. Increase to 0.2 mg midday and bedtime after one week; and after a further week increase by 0.2 mg at breakfast. Further increases should be made in 0.2 mg increments at weekly intervals. Therapeutic dose range 0.2 mg tid to 0.6 mg qid. Always give with food	As effective as levodopa; less likely to cause dyskinesias; longer half-life reduces motor fluctuations	<ul style="list-style-type: none"> • Nausea, vomiting • Dizziness, headache, postural hypotension • Somnolence, lethargy, malaise
Amantadine (anti-viral)	Initially: 100 mg daily. Increase after one week to 100 mg bid. Therapeutic dose range 200–400 mg/day	Mild anti-parkinsonian effect, may suppress dyskinesias	<ul style="list-style-type: none"> • Anorexia, nausea • Nervousness, insomnia • Dizziness, hallucinations, blurred vision • Inflamed swollen legs (livedo reticularis and peripheral oedema)



Drug	Dose	Usage	Common side effects
Anticholinergics			
Benzotropine	Initially 0.5–1 mg/day at bedtime. Increase to 4–6 mg/day in divided doses	May help tremor. Of limited use in other features of PD	<ul style="list-style-type: none"> • Dry mouth, urinary retention, confusion, hallucinations • Special care when prescribing for older patients
Procyclidine	Initially: 2.5 mg tid after meals. Increase to 5 mg tid or qid.		
Trihexyphenidyl	Initially: 1 mg at mealtime. Increase 2 mg/day for 3–5 days to 6 mg/day tid at mealtimes		
Selegiline (irreversible MAO-B inhibitor)	5 mg/day to 5 mg bid. Avoid late evening dose because of insomnia	Inhibits metabolism of dopamine; improves duration of levodopa effect	<ul style="list-style-type: none"> • Insomnia, confusion • Levodopa related side effects
Apomorphine	Administer by subcutaneous injection. 3–30 mg daily in divided doses. Subcutaneous infusion available. Maximum daily dose 100 mg	Refractory motor fluctuations, particularly 'off' episodes inadvertently controlled by levodopa or other dopaminergics	<ul style="list-style-type: none"> • Nausea, vomiting • Hallucinations • During 'on' period: dyskinesias, postural instability, falls, increasing cognitive impairment and personality change