

Antiparkinsonics

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Parkinsons disease

- described in 1817 by Parkinson
- **substantia nigra** degeneration, decrease in dopamine activity, relative prevalence of cholinergic stimulation in corpus striatum
- first **motor**, then **cognitive** deficits
- **iatrogenic (pseudo)parkinsonism**
 - neuroleptics, reserpine, MPTP

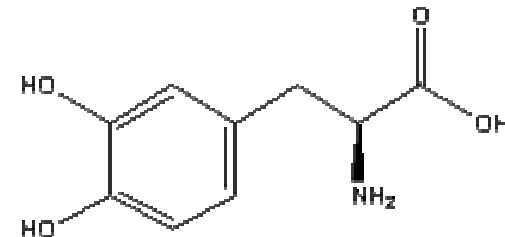


Parkinsons disease: treatment

- Restoration of D/ACh balance
- Stimulation of dopamine system
 - levodopa
 - decarboxylase inhibitors
 - inhibitors of MAO-B, COMT
 - dopamine agonists
- Anticholinergics
- Amantadine and budipine

Parkinsons disease: levodopa

- dopamine does not cross BBB
- L-DOPA is a dopamine precursor
- 4-8g a day
- Side-effects:
 - hypotension
 - vomiting (area postrema)
 - cardiac arytmia



Parkinsons disease: levodopa & decarboxylase inhibitors

- **inhibitors** that do not cross BBB
 - blockage of peripheral dekarboxylase
- **carbidopa and benserazide**
- **levodopa 0.3 – 0.6 g/day**
- **gradual loss of effect**
- **on-off effect**

Inhibition of decomposition

- MAO inhibitors
 - selegiline – a selective MAO-B inhibitor
- COMT inhibitors
 - entacapone – used in combinations

Dopamine agonists

- **Bromocriptine**
 - derived from ergot alkaloids, stimulates D_2
 - pronounced SE – peripheral
- **Lisuride**
 - lysergic acid derivate
 - effective on $5-HT_3$ as well
 - psychotic reactions

Acetylcholine antagonists

- **Atropine** - an anticholinergic
- **New substances** (better BBB crossing)
 - benztropine
 - biperiden
 - metixene
 - ...
- **Mostly tremor reduction**

Other drugs

- **Amantadine**
 - originally an antiviral drug
 - fast loss of effect
- **Budipine**
 - unclear mechanism
 - efficiency not proved

Thank you for you attention



“When I told you to wait outside, I meant in front of the office”