**Natureza do trabalho**: Resumo

## TÍTULO

*PHARMACOLOGIC TREATMENT OF PARKINSON'S DISEASE*

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## RESUMO

**Introduction**: Parkinson's Disease (PD) is an important neurologic disorder that affects 1% of the elderly[1,5] characterized by motor and non-motor symptoms[1,3,4,6]. This study is about spreading what is known about the therapeutic approach in order to promote the best treatment. **Objective**: To present the pharmacologic treatment to PD highlighting its benefits and risks. **Materials and Methods**: This literature review used books and articles published in English and Portuguese in the databases of "Medline", "Scielo" and "PubMed". **Results**: To select the articles for this study, the keywords used were "Parkinson", "treatment" and "pharmacological". The articles selected were among the most relevant with free text available. **Discussion and Conclusion**: The goal of the drug treatment is to increase levels of dopamine and reduce the action of acetylcholine[2]. Levodopa has been the most important drug in the symptomatic treatment of PD improving motor manifestations, promoting independence and quality of life[1,3,6]. Nausea, vomiting and orthostatic hypotension are the most common acute side effects caused by the peripheral action of dopamine. Dyskinesias are important side effects related to plasmatic concentration of the drug and they worsen with the progression of the disease. Also may occur falls, freezing of gait, autonomous dysfunction, sleep disorders and impaired cognitive function[1,3,6]. In long-term treatment the effect of the drug wears-off and so does its benefits[1,3,4,6]. Options for the treatment of PD are a) Dopamine agonists act on the dopaminergic receptors and may be useful in the initial treatment. Compared to levodopa they have longer action and lower risks of dyskinesias, although they've showed more risks for hallucinations, cognitive dysfunction and disorders related to control of impulse[1,3]; b) MAO-B inhibitors block the central metabolism of dopamine, therefore increasing its levels on the synapses and reducing oxidative stress. They possess little benefit on the parkinsonism and may enhance dyskinesias if associated with levodopa[1,3]. It's believed that MAO-B inhibitors have neuroprotection effects because studies in animal models showed decrease of neurodegeneration and retardation of the disease's progression[7,8]; c) COMT inhibitors increase levodopa's half-life and bio-availability. Side effects include nausea, vomiting and increase of dyskinesias[1,3] ;d) Centrally active anticholinergic agents have limited use in the elderly for their side effects as urinary dysfunction, glaucoma and cognitive impairment[1,3]; e) Dopamine precursors and peripheral DOPA-descarboxylase inhibitors enhance effects of levodopa allowing a reduction of dose and maintaining equivalent benefit. Besides, they block the formation of peripheral dopamine that acts on the vomiting center, reducing nausea[9]; f) Dopamine releasing agents increase the release and block the uptake of dopamine by synaptic terminals and have action on motor symptoms[9]; g) Peripheral antidopaminergic agents don't penetrate the CNS barrier and they're used to avoid nausea of levodopa and dopamine agonists[9]; h) Antidepressants, anxiolytics and antipsychotics are used to treat associated neuropsychiatric symptoms[9]. There's no consensus about how to treat Parkinson's Disease, so it's up to

the physician to manage each case. Therefore, it's required knowledge of the therapeutic arsenal available since PD is a chronic and progressive disorder that affects millions of people in the world.

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