Characterization of L-DOPA Induced Dyskinesia in 6-OHDA-Hemiparkinsonian Swiss mice

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INTRODUCTION: L-DOPA-induced dyskinesia (LID) is a major complication of the pharmacotherapy of Parkinson's disease (PD). Animal models of LID are essential for investigating pathogenic pathways and therapeutic targets. Is a first time we have been reported dyskinesia in Swiss mice. **OBJETIVE**: validate the ideal L-DOPA dose to reproduce LIDs in Swiss mice. **METHODS**: 6-hydroxydopamine hydrochloride (6-OHDA, 10µg) was injected in the striatum of adult Swiss mice (male, 8–10 weeks, 40–45 g). First, the hemiparkinsonism was evaluated through R(-)-apomorphine challenge (0.5 mg;kg, s.c.) and cylinder task. After 4 weeks of recovery, selected animals were daily treated with L-DOPA (50, 60 or 70 mg/kg, i.p.) plus Benserazide (25, 30 or 35 mg/kg, i.p) respectively. Controls were treated with vehicle (saline 0.9%). LIDs, or Abnormal Involuntary Movements (AIMs) were evaluated for 120 min during 3 weeks: 1, 4, 7, 14, 21 days. We evaluated TH (Tyrosine hydroxylase) and DAT (Dopamine transporter) in both striatum of animals through western blot analysis. **RESULTS**: R(-)-apomorphine challenge and cylinder task confirmed hemiparkinsonism in the Swiss mice. 6-OHDA induced a marked TH and DAT immunocontent reduction in the striatum. The hemiparkinsonian mice presented strong LID during the 3 weeks. However, the severity of LID did not presented a dose response. **CONCLUSION**: The L-DOPA/Benserazide dose (50/25 mg/kg, i.p.) is ideal for modelling LIDs in 6-OHDA-hemiparkinsonian Swiss mice.

Key words: Parkinson´s disease; Levodopa; Dyskinesia
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