Research Article

Levodopa Induced Dyskinesia – Case Report

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ABSTRACT

Levodopa (L-Dopa) is an amino acid precursor of dopamine moiety and universally used drug in the treatment of Parkinsonism. Levodopa-induced dyskinesia is a type of dyskinesia related with levodopa used to treat parkinsonism. Neural mechanism includes contradictory uneven regulatory changes in the basal ganglia circuitry, resulting from both dopamine depletion and drug treatment. Here we present a case report of dyskinesia induced by Levodopa.

Keywords: Levodopa induced dyskinesia (LID), Dopamine, Syndopa, Parkinsonism.

INTRODUCTION

Levodopa (L-dopa) is an aromatic amine that is metabolized to dopamine. Beneficial effects are negated during long term use of Levodopa which complicates significantly and thereby disabling fluctuations and dyskinesia[1]. The most serious problem faced by the physicians is Levodopa-induced dyskinesia. Parkinson's disease is a progressive neurodegenerative disorder causing motor and non-motor symptoms[2]. During younger age when it is noticed that parkinson's disease has resulted in disease severity when high Levodopa dose is administered thus increasing the hazard of rising LID. While using a lesser dosage of Levodopa for the pharmacological effect and prophylaxis approaches of LID using dopamine agonists is seen as first line therapy in Parkinsonism, neurosurgery, amantadine, and atypical neuroleptics[3]. It is seen that Peak-dose dyskinesia is due to peak plasma levels of levodopa in the form of LID[4].

CASE HISTORY

50 Year old female patient a known case of Parkinsonism since 5 years on Levodopa, came to the tertiary care teaching hospital with complaints of tremors of right hand while in action as well as resting tremor later involved in the left hand. While perusing her history it was noticed that since 4 months her numbness of upper right limb which started from elbow and then within one hour took toll of her whole right arm and left hand over plantar and dorsal aspect and later on after 2 years she found difficulty in walking while taking short steps and also while turning sideways which led to the tendency of falling forward but no history of falls. There was also slowness of activities since 4 years. It was also noticed that there was reduced speech, slurring and initiation difficulty present for the past 2 years and had difficulty in sleeping, dyskinetic movements of upper limb with involvement of lips after half an hour of taking medication for the past one month. With all these complaints she was admitted for drug titration. On local examination we found out mild lower limb spasticity and UPDRS (Unified parkinson's disease) Mentation, mood, behavior: 2, Activities of daily living: 10, Motor examination: 23. Extrapyramidal features are present with Grade 3 right upper and grade 3 Bradykinesia. Drug titration was done with spacing of Syndopa and Amantadine at different times with continuation of rest of drugs.

DISCUSSION

Unbearable complications in the treatment with Levodopa for Parkinsonism experienced by maximum patients are perceived during involuntary movements [5]. These involve the respiratory muscles, head, trunk and limbs. Dose reduction can reduce the incidence of this condition. In this case a Naranjo ADR probability scale was applied for causality assessment and the score was 8. (probable). A Re-challenge was not done due to inherent risk. Clinical result was measured on betterment of Unified Parkinson Disease Rating Scale (UPDRS) motor scores[6]. As a part of management Amantadine 100 mg was given to the patient as well as drug titration was done with spacing of syndopa and amantadine at different times. In this case Tab. Syndopa plus 125mg given at 7am-1pm-7pm and Cap. Amantadine 100mg given at 9am-0-9pm. The prevalence of LID is more with increased time period of therapy, increasing about 10% per year throughout the first 7 years[7]. The treatment of peak dose dyskinesias induced by Levodopa must be measured in respect to the subtype and the severity of dyskinesias, and the patient. Suitable approach is to decrease the single dose of levodopa, to feast out the day-to-day levodopa dose and to attempt therapy with sustained release formulation of the drug[8]. However patients with peak dose dyskinesia frequently involve motor fluctuations therefore divide the daily dose of Levodopa into lesser doses as well as it can be given in repeated doses which helps to decrease the adverse

effects of levodopa induced dyskinesia. To space the dose of levodopa, D2 agonist can be added[9].

CONCLUSION

While treating Levodopa induced dyskinesia, difficulties are seen and hence seen efforts should be made in preventing them. Clinicians and Clinical pharmacist should have the knowledge about this reaction so it can be prevented early as possible. To prevent and execute the problem for LID while administering lesser dosage of Levodopa, using primary therapy as dopamine agonists, using Amantadine or by Drug titration done with spacing of Syndopa and Amantadine at different time interval.

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