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Concomitant Rigidity in Stroke Affected Spastic Limbs and its Amenability to Dopaminergic Therapy in Post Stroke Rehabilitation – Ananya Das - Sanjay Gandhi Postgraduate Institute of Medical Sciences, India

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Background:
Several stroke patients remain disabled due to severe stiffness in the affected hemiparetic limbs despite adequate therapeutic measures. This disability limits activities of daily living and social participation in about half of the stroke survivors. We therefore, looked at any cause of stiffness (other than spasticity) in the affected limbs and any benefit of additional therapeutic measure based on the associated cause. In cerebrovascular diseases, it is possible that the presence of rigidity in the paralysed half of the body may aggravate the stiffness caused by corticospinal tract involvement in some of the stroke survivors.

Materials and Methods:
We did a prospective parallel quasi-randomized intervention trial in a tertiary care hospital of Northern India. Patients >18 years of age with ischemic/hemorrhagic stroke and concomitant cogwheel rigidity in stroke affected limbs were enrolled in the study. Of eighty-nine patients included in the study, fifty-six received levodopa +carbidopa (100+25) mg combination thrice a day in combination with continuous assisted synchronized periodic (CASP) physiotherapy (Dopaminergic or DT group) while thirty-three received only CASP therapy (Non-dopaminergic or non-DT group).

Results:
There was statistically significant improvement in cogwheel rigidity and Unified Parkinson Disease Rating Scale (UPDRS) score in DT group compared to non-DT group at 2,4 and 8 weeks ($p<0.05$). Spasticity improved significantly in both groups, probably as a result of good physiotherapy and anti-spastic drugs ($p<0.001$). Activities of Daily Living (ADL) and modified Rankin scale (mRS) scores however, showed significant improvement only in DT group across the timeline ($p<0.001$).

Conclusion:
Concomitant cogwheel rigidity in addition to spasticity is a hitherto unknown but a significant cause of stiffness in stroke affected limbs in about one- fourth of the patient's alleviation of which may contribute to ease of doing physiotherapy with a possible better outcome.