

Akinetic-rigid Parkinson's disease

The akinetic/rigid (AR) [motor](#) subtype of [Parkinson's Disease](#) is associated with increased rates of motor and [cognitive decline](#). Cross-sectional studies examining the neural correlates of AR have found abnormalities in both subcortical and cortical networks involved in motor planning and execution relative to controls.

Horisawa et al. evaluated the [safety](#) and [efficacy](#) of unilateral pallidothalamic [tractotomy](#) for [akinetic-rigid Parkinson's disease](#).

Fourteen [akinetic-rigid Parkinson's disease](#) patients, who were enrolled in this prospective open-label study, underwent unilateral [pallidothalamic tractotomy](#). The [Movement Disorder Society](#)-Unified Parkinson's Disease Rating Scale (MDS-UPDRS) Part III and Part IV ([dyskinesia](#) and [dystonia](#)) scores and [levodopa equivalent daily dose](#) (LEDD) were evaluated at [baseline](#) and at 3 and 12 months postoperatively.

Of the 14 patients enrolled in the study, 4 were lost to follow-up and 10 were analyzed. The total MDS-UPDRS Part III score significantly improved from 45 ± 4.6 at baseline to 32.9 ± 4.8 at 12 months postoperatively ($p = 0.005$). Contralateral side rigidity and bradykinesia significantly improved from 4.4 ± 0.5 and 10.4 ± 1.5 at baseline to 1.7 ± 0.4 ($p = 0.005$) and 5.2 ± 1.4 ($p = 0.011$) at 12 months, respectively. While [posture](#) significantly improved with a 20% reduction in scores ($p = 0.038$), no significant improvement was found in [gait](#) ($p = 0.066$). [Dyskinesia](#) and [dystonia](#) were improved with a 79.2% ($p = 0.0012$) and 91.7% ($p = 0.041$) reduction in scores, respectively. No significant change was found in the LEDD. [Hypophonia](#) was noted in 2 patients, eyelid [apraxia](#) was noted in 1 patient, and a reduced response to [levodopa](#), which resulted in an increase in the daily dose of levodopa, was noted in 3 patients. No serious permanent [neurological deficits](#) were observed.

Unilateral pallidothalamic tractotomy improved contralateral side rigidity and [bradykinesia](#), [dyskinesia](#), and [dystonia](#) in patients with [akinetic-rigid Parkinson's disease](#). [Clinical trial](#) registration no.: UMIN000031138 ([umin.ac.jp](#)) ¹⁾.

¹⁾

Horisawa S, Fukui A, Yamahata H, Tanaka Y, Kuwano A, Momosaki O, Iijima M, Nanke M, Kawamata T, Taira T. Unilateral pallidothalamic tractotomy for akinetic-rigid Parkinson's disease: a prospective open-label study. J Neurosurg. 2021 Jan 15;1-7. doi: 10.3171/2020.7.JNS201547. Epub ahead of print. PMID: 33450738.

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