Regional Cerebral Cortical Atrophy

Lower urinary tract symptoms (LUTS) are the most common nonmotor symptoms usually occurring mid-stage of Parkinson's disease (PD); however, its underlying mechanisms are unknown. Roh et al. aimed to assess whether corticometry or volumetry can identify a pattern of cerebral cortical changes in PD patients with LUTS.

They recruited 85 idiopathic PD patients and performed corticometry and volumetry on various cortical regions using each patient's magnetic resonance imaging. To identify a correlation between the cortical thickness/volume and nonmotor symptoms scale domain 7 scores, which represent the severity of LUTS, they performed a general linear model and region of interest analyses.

Significant regional thinning of the left precuneus left temporal pole, left precentral, right precuneus, and right pars opercularis was correlated with nonmotor symptoms scale domain 7 scores. They also found that cortical volumes of the left precuneus and left frontal pole were inversely correlated with the severity of urinary symptoms.

This study showed that the thicknesses and volumes of several cortical regions were significantly correlated with the severity of LUTS in PD patients. The findings of regional atrophy and thinning of specific cortical regions in this study provide additional evidence that multiple cortical regions, especially the precuneus cortex, not only may be involved in urinary dysfunctions of PD patients but also may help to elucidate the exact underlying mechanisms for LUTS in PD patients [1)]

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Roh H, Kang J, Hwang SY, Koh SB, Kim JH. Regional Cerebral Cortical Atrophy is Related to Urinary Tract Symptoms in Parkinson's Disease. J Neuroimaging. 2021 Feb 3. doi: 10.1111/jon.12829. Epub ahead of print. PMID: 33534966.