

## Proton MR Spectroscopic Changes in Parkinson's Disease

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**Purpose:** To investigate whether there are significant changes in regional brain metabolism in patients with Parkinson's disease after thalamotomy using proton magnetic resonance spectroscopy (1H MRS).

**Methods:** Fifteen patients with Parkinson's disease of mean age 56.5 years (7 males and 8 females; mean age, 56.5 years) that have treated with levodopa were included. All patients with tremor experienced amelioration of their symptoms on the side contralateral to the thalamotomy. As a single-voxel technique, 1H MR spectra were obtained from the volume of interested regions in thalamus and primary motor cortex. Spectral parameters were: 20 ms TE, 2000 ms TR, 128 averages, 2500 Hz spectral width, and 2048 data points.

**Results:** We found that NAA/Cho ratios showed generally low levels in thalamus in Parkinson's disease patients with clinical improvement following thalamotomy.

**Conclusions:** 1H MRS may be a useful utility for the aid in better understanding the pathophysiologic process in Parkinson's disease patients on the basis of the variation of NAA/Cho ratio.

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