

Regional cerebral glucose metabolism in patients with Parkinson's disease with or without dementia

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By means of positron emission tomography, the cerebral glucose metabolism in 5 patients with Parkinson's disease with dementia was compared with that in 9 patients without dementia, and that in 5 normal volunteers. The metabolic rates for glucose were measured by placing one hundred regions of interest. In the demented patients, cerebral glucose metabolism was diffusely decreased compared with that of the non-demented patients and the normal controls. The most significant decrease in glucose metabolism was observed in the angular gyrus (49.7% of the normal controls). The glucose metabolism in the cingulate, pre- and postcentral, occipital and subcortical regions was relatively spared (62.1 to 85.5% of the normal controls). In the patients without dementia, the glucose metabolism in each region was not significantly different from that in the normal controls. These results suggest that diffuse glucose hypometabolism in the cerebral cortex may correlate with that of patients with Parkinson's disease with dementia.

Key words: positron emission tomography, fluorodeoxyglucose, glucose metabolism, Parkinson's disease, dementia