Aims: (1) To investigate the neural substrate of impaired activities of daily living (ADL) in Lewy body-associated disorders, such as dementia with Lewy bodies, classical Parkinson's disease, and Parkinson's disease dementia, and (2) to explore the effect of education on the relationship between cerebral metabolic changes and ADL performance. Methods: Fifty-four patients with Lewy body-associated disorders underwent an extensive clinical evaluation including cerebral positron emission tomography with 18F-fluoro-2-deoxy-glucose scanning. First, those brain areas were identified where ADL performance and glucose metabolism were significantly correlated. Second, brain regions were detected where the association between metabolic changes and ADL performance differed significantly between patients with a low and a high educational background. Results: There was a significant association between glucose hypometabolism and impaired ADL performance in the prefrontal, temporoparietal, and occipital association cortices and the precuneus. However, there was a significantly stronger association between hypometabolism and impaired ADL in the low education group compared with the high education group in the right middle
The study suggests (1) that brain metabolic alterations are significantly associated with the loss of everyday functioning in Lewy body-associated disorders and (2) that education modifies this association.