FDG PET Findings according to Wandering Patterns of Patients with Drug-naïve Alzheimer's Disease

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Abstract:

Background and Purpose: To explore anatomic substrate of specific wandering patterns in patients with Alzheimer's disease (AD) by performing positron emission tomography with 18F fluorodeoxyglucose positron emission tomography (FDG PET).

Methods: Drug-naïve AD patients with wandering (n=80) and without wandering (n=262) were recruited. First, the specific pattern of wandering type was operationally classified according to specific wandering score and clinical assessment. Second, brain FDG PET was performed and fluorodeoxyglucose (FDG) uptake differences of specific brain regions according to wandering patterns were compared to those of non-wanderers.

Results: In patients with pacing pattern, FDG PET showed significant lower FDG uptake in both middle cingulum and left putamen cluster compared to non-wanderers. The right precuneus and supplementary motor area in patients with random pattern and left calcarine sulcus, right calcarine sulcus, right middle cingulum, and right post central gyrus in patients with lapping pattern had significantly lower FDG uptake compared to non-wanderers.

Conclusions: This study showed that wandering in patients with AD had three distinct patterns. These specific patterns showed significant lower FDG uptake in specific brain areas compared to non-wanderers.