CARDIAC META-IODOBENZYL GUANIDINE (MIBG) SCINTIGRAPHY CAN DIFFERENTIATE FRONTOTEMPORAL DEMENTIA FROM DEMENTIA WITH LEWY BODIES

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Introduction: Nuclear neuroimaging approaches are useful supportive tools to differentiate patients with dementia, and reduced dopamine transporter imaging was included in a suggestive feature in the consensus criteria of dementia with Lewy bodies (DLB). However, it is sometimes difficult to differentiate frontotemporal dementia (FTD) from DLB using dopamine transporter imaging. Recently, it has been reported that cardiac meta-iodobenzylguanidine (MIBG) scintigraphy is a useful imaging tool to differentiate patients with dementia as well as parkinsonism.

Aims:

1) To see whether or not cardiac MIBG scintigraphy can differentiate FTD from DLB.

2) To see whether or not the cardiac sympathetic nerve is pathologically involved in FTD.

Methods: We performed cardiac MIBG scintigraphy in 9 FTD patients, 30 DLB and 30 control subjects. Cardiac MIBG uptake is assessed by late phase of H(heart)/M(mediastinum) ratio. Moreover, we pathologically examined cardiac tissues in 3 autopsied cases with FTD.

Results: H/M ratio of patients with FTD was 2.52±0.30 and was not significantly different from that of control subjects (2.39±0.29), while that of patients with DLB (1.33±0.29) was significantly reduced compared with those of patients with FTD (p < 0.0001) and control subjects (p < 0.0001). Cardiac sympathetic nerves of all the patients with FTD were well preserved as seen in the control subjects.

Conclusion: These results indicate that in FTD the cardiac sympathetic nerve is well preserved and confirm that cardiac MIBG scintigraphy is a useful noninvasive imaging tool to differentiate FTD from DLB.