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General Summary

Our researches in 2017 consist of the following areas: 1) cerebrovascular disease 2) neurodegenerative disease. We did not only clinical researches but started to do basic researches regarding these areas.

Research Activities

Cerebrovascular disease

Firstly, we continued to assume a leading role of multi-center study about the clinical characteristics in juvenile stroke and to take part in other multi-center studies (study about wake-up stroke, study about emobilc stroke undetermined sources and study about stroke under anticoagulation therapy). Secondary, we have tried to establish intra-hospital system to treat hyper acute stroke patients, consisting of stroke coordinate nurses who support the hyper acute treatment including thrombolysis and new smartphone application (JOIN®) that can share text, neuroimagings, photos, and videos among stroke team. By using smartphone App (JOIN®), we are able to evaluate the stroke volume and the site of occlusion with the same quality as PC monitor. Thirdly, we did several prospective and retrospective studies from our stroke care unit (SCU) registry. The main thema of our clinical studies are follows: 1) right-to-left shunt (RLS) evaluation using a novel probe (pasteable soft ultrasound probe; PSUP), 2) insertable cardiac monitor for the patients with embolic stroke of undetermined source (ESUS), 3) nonstenotic carotid plaque of ipsilateral ESUS, 4) clinical characteristics of acute stroke patients with venous thromboembolism, 5) pre-operative double antiplatelet therapy for the patients with unruptured brain aneurysm who underwent coil embolization. On the other hand, we continued the basic research to establish animal model (especially primate model) of cerebral infarction with middle cerebral artery occlusion.

Neurodegenerative disease

1. Parkinson's disease (PD) and the related disorders

We continue some clinical studies about the cardiovascular autonomic dysfunction in patients with PD and the related disorders. At first, we reported that the patients with reduced nocturnal blood pressure fall had a low cardiac uptake in ^{123}I-MIBG scintigraphy.

We also evaluated the influence of dopamine agonist for nocturnal blood pressure fall obtained from 24-hour ambulatory blood pressure monitoring test. Nocturnal blood pressure fall may improve in patients which some dopamine agonist had administered. Secondary, we clarify that PD patients with high norepinephrinergic orthostatic hypotension have the characteristics of cognitive decline and impaired vasopressin release. On the other hand, We conducted a pilot study to evaluate a new olfactory threshold measurement device (FDL-1; Shimadzu, Kyoto, Japan) for differential diagnosis of parkinsonian disorders.

2. Dementia and the related disorders

We did some studies to clarify the associations between neuroimaging and neuropathological feature. We conduct a Dat SPECT examination on dementia with grain (DG) to clarify the difference between groups with parkinsonism. We also demonstrate a finding called cingulate island sign (CIS) on SPECT is seen in a group of patients neuropathologically diagnosed as pure dementia with Lewy bodies (DLB).

3. Amyotrophic lateral sclerosis

We clarified that percutaneous endoscopic gastrostomy (PEG) with noninvasive positive pressure ventilation seemed to be a valid method for dysphagic ALS patients with respiratory failure. We also started basic research about ALS pathogenesis.

Publications

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Reviews and Books

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