

## Department of Internal Medicine

### Division of Neurology

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#### General Summary

Our clinical research in 2015 was conducted in the following areas: (1) cerebrovascular disease, (2) neurodegenerative disease, and (3) autoimmune disease.

#### Research Activities

##### *Clinical researches*

##### *Cerebrovascular disease*

##### 1. Patients with hyperacute stroke associated with aortic dissection

To avoid administering a tissue plasminogen activator to patients with stroke and aortic dissection, the aortic dissection score should be used to make prehospital management more adequate.

##### 2. Comparative study of transcranial Doppler examination and a novel probe for diagnosing patent foramen ovale

An examination with a pasteable soft ultrasound probe at the common carotid artery can be used to evaluate the presence of a large patent foramen ovale more precisely than can a transcranial Doppler examination.

##### 3. Analysis of cerebral microbleeds after acute-phase treatment of a lacunar infarction

Acute-phase treatment rarely increases the number of cerebral microbleeds in patients with lacunar infarction and branch atheromatous disease.

##### 4. Complications of novel oral anticoagulants in patients with acute cerebral infarction

Careful neurological examinations are needed after novel oral anticoagulants have been administered to patients with acute cerebral infarction.

##### 5. Thromboembolic complications of coil embolization for unruptured brain aneurysm

Factors that tended to be related to symptomatic infarction were a low volume embolization ratio, a wide-necked aneurysm, and a long operative time.

##### 6. Transcranial color-coded sonography of the vertebral artery for the diagnosis of right-to-left shunts

##### *Neurodegenerative disease*

##### 1. Cardiovascular autonomic dysfunction in patients with Parkinson's disease and related disorders

Patients with reduced nocturnal blood pressure fall were shown with <sup>123</sup>I-metaiodobenzyl-

guanidine scintigraphy to have a low cardiac uptake. Nocturnal blood pressure fall may improve in some patients who have received a dopamine agonist.

2. Evaluation with a portable gait rhythmogram of gait disturbance in Parkinson's disease  
The portable gait rhythmogram has high sensitivity for estimating clinically important deficits of hypokinesia and gait bradykinesia.

3. White matter lesions are correlated with olfactory dysfunction in early Parkinson's disease

Olfactory dysfunction was highly correlated with white matter lesions. This finding suggests that the pathogenesis of olfactory dysfunction is associated with that of white matter lesions in Parkinson's disease.

4. Quantitative motion analysis with a portable gait rhythmogram after cerebrospinal fluid is drained from patients with idiopathic normal pressure hydrocephalus

A portable gait rhythmogram can easily be used to analyze long-duration gaits in daily life and to provide additional quantitative data on former measurements of cerebrospinal fluid drainage.

5. Survey of prodromal symptoms of Parkinson's disease in Japan

6. Thyroid hormone level is associated with motor symptoms in early Parkinson's disease  
The thyroid hormone level, especially the free triiodothyronine level, is closely related to motor symptoms in patients with early Parkinson's disease.

7. Clinical characteristics of supine hypertension in early Parkinson's disease

Regarding global cognitive decline, supine hypertension is a far riskier comorbidity of early-stage Parkinson's disease than is orthostatic hypotension.

8. Body weight and dysautonomia in early Parkinson's disease

Dysautonomia may play a partial role on weight variation in the early stage of Parkinson's disease.

9. Depression is associated with abnormal nocturnal hypotension in early Parkinson's disease

10. Hyponatremia and fasting hypoglycemia in Parkinson's disease

11. Dysphagia and vocal cord palsy in multiple system atrophy

In patients with multiple system atrophy and vocal cord palsy, percutaneous endoscopic gastrostomy was enforced safely with noninvasive positive pressure ventilation therapy.

12. Dysphagia in Parkinson's disease and dementia with Lewy bodies

#### *Autoimmune disease*

1. Findings of single photon emission computed tomography after human papillomavirus vaccination in Japan

Various clinical symptoms in patients with human papillomavirus vaccine associated with neuroimmunopathic syndrome were caused by central nervous system impairment after vaccination.

#### **Publications**

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