

뇌신경재활

게시일시 및 장소 : 10 월 18 일(금) 13:15-18:00 Room G(3F)

질의응답 일시 및 장소 : 10 월 18 일(금) 15:45-16:30 Room G(3F)

## **P 2-65**

### **Status of Post-stroke Dysphagia in South Korea**

Nayeon Ko<sup>1\*</sup>, Hyun Haeng Lee<sup>1</sup>, Jongmin Lee<sup>1,2†</sup>, Min Kyun Sohn<sup>3</sup>, Deog Yung Kim<sup>4</sup>, Sam-Gyu Lee<sup>5</sup>, Yong-il Shin<sup>6</sup>, Gyung-Jae Oh<sup>7</sup>, Yang-Soo Lee<sup>8</sup>, Min Cheol Joo<sup>9</sup>, So Young Lee<sup>10</sup>, Junhee Han<sup>11</sup>, Jeonghoon Ahn<sup>12</sup>, Ji Yoo Choi<sup>13</sup>, Sung Hyun Kang<sup>13</sup>, Young Taek Kim<sup>13,14</sup>, Won Hyuk Chang<sup>15</sup>, Yun-Hee Kim<sup>15,16†</sup>

Konkuk University Medical Center, Department of Rehabilitation Medicine<sup>1</sup>, Konkuk University School of Medicine, 3Research Institute of Medical Science<sup>2</sup>, Chungnam National University School of Medicine, Department of Rehabilitation Medicine<sup>3</sup>, Yonsei University College of Medicine, Department and Research Institute of Rehabilitation Medicine<sup>4</sup>, Chonnam National University Medical School, Department of Physical and Rehabilitation Medicine<sup>5</sup>, Pusan National University School of Medicine, Pusan National University Yangsan Hospital, Department of Rehabilitation Medicine<sup>6</sup>, Wonkwang University, School of Medicine, Department of Preventive Medicine<sup>7</sup>, Kyungpook National University School of Medicine, Kyungpook National University Hospital, Department of Rehabilitation Medicine<sup>8</sup>, Wonkwang University School of Medicine, Department of Rehabilitation Medicine<sup>9</sup>, Jeju National University Hospital, Jeju National University School of Medicine, Department of Rehabilitation Medicine<sup>10</sup>, Hallym University, Department of Statistics and Institute of Statistics<sup>11</sup>, Ewha Womans University, Department of Health Convergence<sup>12</sup>, Korea Centers for Disease Control and Prevention, Division of Chronic Disease Prevention, Center for Disease<sup>13</sup>, Korea Centers for Disease Control and Prevention, Division of Chronic Disease Prevention, Center for Disease<sup>14</sup>, Samsung Medical Center, Sungkyunkwan University School of Medicine, Department of Physical and Rehabilitation Medicine, Heart Vascular Stroke Institute<sup>15</sup>, Sungkyunkwan University, Department of Health Science and Technology, Department of Medical Device Management and Research, Department of Digital Health, SAIHST<sup>16</sup>

#### **Objective**

Poststroke dysphagia is a common symptom in stroke patients. There are few reports covering the incidence of poststroke dysphagia in South Korea. This study aimed to describe the current status of poststroke dysphagia incidence and recovery in South Korea. We also demonstrated the clinical factors affecting recovery of poststroke dysphagia by comparing the subgroup which had showed the distinct recovery pattern of poststroke dysphagia after discharge from acute care hospital.

#### **Method**

We screened the patients enrolled for Korean Stroke Cohort for functioning and rehabilitation (KOSCO), which was a prospective multi-center cohort of stroke patients admitted to university hospitals in nine distinct areas of Korea (KOSCO). We included the patients with first ever acute stroke, with onset of symptoms within seven days prior to screening, and with age more than 19-year-old were included in this study. We excluded patients who had previous history of stroke, transient ischemic attack, traumatic intracranial hemorrhage, non-Korean nationality, and any missing values of follow-up ASHA-NOMS grade. We also dichotomized the patients who had been fed only through tube (nasogastric tube or percutaneous endoscopic gastrostomy tube) at discharge from acute hospital, according to the feeding status at post-stroke 12 months (Group A; tube feeding, Group B; general diet) to identify the clinical factors affecting poststroke dysphagia recovery.

### **Result**

The proportion of poststroke dysphagia patients during 2-year follow up period are described in Table 1. Nearly 9% of patients had severe dysphagia with tube feeding at the time of discharge and they were discharged from acute hospital at  $34.43 \pm 41.80$  days after stroke. There were significant differences of age at stroke onset (Group A vs. Group B;  $72.45 \pm 11.78$  vs  $62.23 \pm 12.26$ ,  $P < 0.001$ ), BMI (Group A vs. Group B;  $22.23 \pm 3.17$  vs  $23.56 \pm 4.29$ ,  $P < 0.05$ ), and initial NIHSS (Group A vs Group B;  $22.16 \pm 8.17$  vs  $12.81 \pm 10.15$ ,  $P < 0.001$ ) between two subgroups. Furthermore, Mini-Mental State Examination (MMSE) and the Fugl-Meyer Assessment (FMA) score were significantly higher in Group B than Group A, entirely during the poststroke 12 months period.

### **Conclusion**

We demonstrated the incidence and recovery pattern of poststroke dysphagia in South Korea. We also showed the patients who had shown the full recovery of poststroke dysphagia at poststroke 12 months from tube-fed status at discharge from acute hospital had younger age of stroke onset, higher BMI, lower initial NIHSS, higher FMA and higher MMSE compared to the patients who remained tube-fed at poststroke 12 months.

**Acknowledgment** :This work was supported by the Research Program funded by the Korea Centers for Disease Control and Prevention(2019E320200).

Table 1. Proportion of stroke patients according to the severity of dysphagia

Chronicity	ASHA-NOMS							Total
	Gr.1 (tube feeding)	Gr.2	Gr.3	Gr.4	Gr.5	Gr.6	Gr.7 (considered as dysphagia (-))	
Poststroke 1 week	1218 (15.25%)	73 (0.91%)	93 (1.16%)	184 (2.30%)	534 (6.69%)	1117 (13.99%)	<b>4766</b> <b>(59.69%)</b>	7985
Poststroke 3 months	252 (4.27%)	31 (0.52%)	34 (0.58%)	71 (1.20%)	172 (2.91%)	648 (10.97%)	4699 (79.55%)	5907
Poststroke 6 months	147 (2.71%)	12 (0.22%)	39 (0.72%)	61 (1.12%)	135 (2.48%)	586 (10.79%)	4453 (81.96%)	5433
Poststroke 12 months	104 (2.02%)	14 (0.27%)	26 (0.51%)	63 (1.22%)	127 (2.47%)	614 (11.93%)	4197 (81.57%)	5145
Poststroke 24 months	89 (1.81%)	4 (0.08%)	29 (0.59%)	58 (1.18%)	119 (2.43%)	531 (10.82%)	<b>4077</b> <b>(83.09%)</b>	4907
At discharge	<b>700</b> <b>(8.90%)</b>	70 (0.89%)	97 (1.23%)	148 (1.88%)	453 (5.76%)	1041 (13.24%)	<b>5356</b> <b>(68.10%)</b>	7865
Chronicity at discharge (days)	34.43 ± 41.80	39.72 ± 37.16	41.08 ± 37.75	32.22 ± 29.55	24.19 ± 22.55	19.07 ± 22.17	15.37 ± 18.12	18.23 ± 23.29

Table 2. Comparison between two groups; Group A with patients whose feeding status at discharge was tube feeding and still maintaining tube feeding at poststroke 12 months, and Group B with patients whose feeding status at discharge was tube feeding but having general diet at poststroke 12 months.

Characteristics	Group A (n = 75)	Group B (n = 99)	p-value
Age at stroke	72.45 ± 11.78 [41	62.23 ± 12.26 [27	< 0.001
Sex (M / F) [n]	40 / 35 (53.33% /	68 / 31 (68.69% /	0.0562
BMI	22.23 ± 3.17 [15 –	23.56 ± 4.29 [15 –	0.045
Initial NIHSS	22.16 ± 8.17 [5 –	12.81 ± 10.15 [0 –	< 0.001
FMA			
At poststroke 1	10.99 ± 11.39 [0 –	39.32 ± 38.53 [0 –	< 0.001
At discharge	15.61 ± 20.30 [0 –	46.11 ± 39.11 [0 –	< 0.001
At poststroke 3	12.67 ± 17.54 [0 –	62.29 ± 39.71 [0 –	< 0.001
At poststroke 6	11.07 ± 13.40 [0 –	64.63 ± 36.59 [0 –	< 0.001
At poststroke 12	12.33 ± 16.79 [0 –	69.42 ± 36.24 [0 –	< 0.001
MMSE			
At poststroke 1	2.26 ± 5.62 [0 –	12.61 ± 11.26 [0 –	< 0.001
At poststroke 3	4.04 ± 8.11 [0 –	19.56 ± 8.80 [0 –	< 0.001
At poststroke 6	2.50 ± 5.38 [0 –	20.16 ± 9.07 [0 –	< 0.001
At poststroke 12	2.38 ± 6.06 [0 –	21.08 ± 8.56 [0 –	< 0.001