

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)

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Correlation between Penetration/Aspiration and Dysarthria in Patients with Stroke

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Purpose

Dysphagia and dysarthria are common symptoms in stroke patients. Dysarthria has been reported to be associated with dysphagia and the most previous studies were based only on the presence or absence of symptoms. The purpose of this study is to investigate the correlation between dysarthria using picture consonant articulation test (PCAT) and penetration/aspiration using penetration aspiration scale (PAS) score in patients with stroke.

Method

This study is a retrospective study. We enrolled patients who underwent a videofluoroscopic swallowing study (VFSS) and PCAT at the same time in patients with the first stroke between 2012 and 2018 in our center. Penetration or aspiration was measured by one physician using VFSS and dysarthria was measured by one speech language therapist using PCAT. We analyzed the correlation between PAS score and PCAT score in all patients. In addition, PAS score was compared between dysarthria group and non-dysarthria group. The dysarthria group was defined as the group with less than 100 points in PCAT. All statistical analyses were performed using SPSS software. We considered a p-value lower than 0.05 as statistically significant.

Result

A total of 176 patients were enrolled in this study, including 117 men and 59 women. Their mean age was 64.72±30.13 years old. Of the 176 patients, 93 patients suffered an ischemic stroke and 83 patients suffered a hemorrhagic stroke. The mean PCAT score was 83.47±47.53 and PAS score was 3.34±5.50 (Table 1). The correlation between PCAT score and PAS score was not statistically significant (correlation coefficient $r=-0.139$, $p=0.07$) (Fig. 1). According to the PCAT score, 119 patients were dysarthria group and 57 patients were the non-dysphagia group. There was no significant demographical difference between non-dysarthria group and dysarthria group, based on age, gender and types of stroke. The mean PAS score was 3.46±5.52 in dysphagia group and 3.07±5.49 in the non-dysphagia group. The mean PAS score of the dysarthria group was higher than that of the non-

dysarthria group, however, there was no statistically significant difference ($p=0.39$). Penetration, aspiration and the distribution of each PAS 1 to 8 was not statistically significant between the two groups ($p>0.05$) (Table 2).

Conclusion

There was no correlation between penetration/aspiration and dysarthria in a patient with stroke. In addition, there was no difference in penetration/aspiration between the dysarthria group and the non-dysarthria group. Since dysarthria cannot predict penetration or aspiration after stroke, assessment of dysphagia, with or without dysarthria, should be performed.

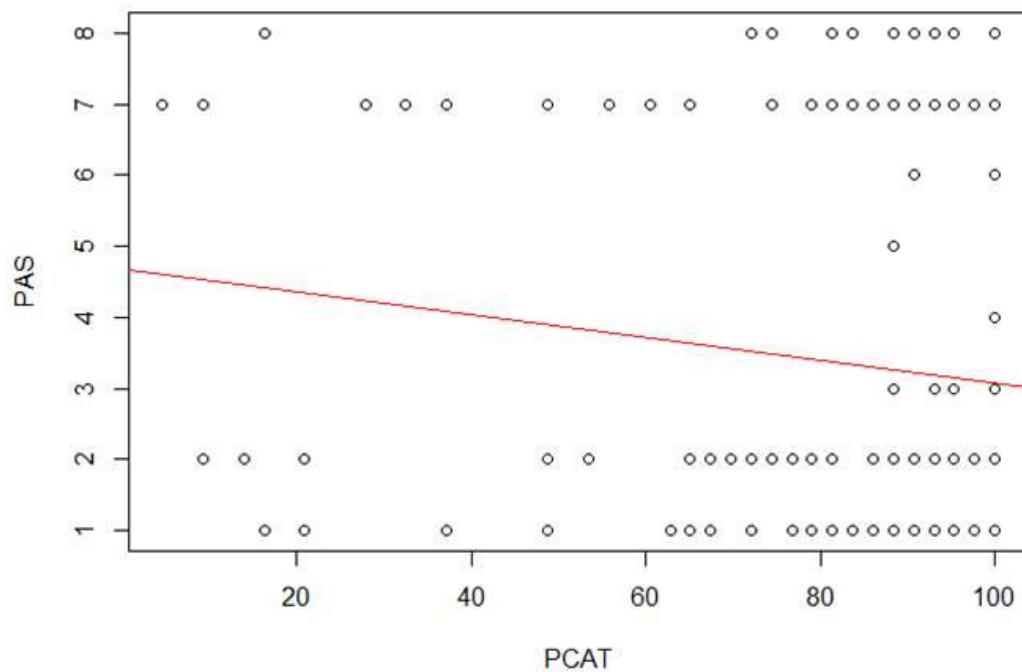


Figure. 1 No Correlation between preoperative PCAT score and PAS score

Table 1 Characteristics of Subjects

Characteristics	Value
Age(mean±2SD)	64.72±30.13
Gender	
Men	117 (66%)
Women	59 (34%)
Stroke	
Infarction	93 (53%)
Hemorrhage	83 (47%)
Dysarthria	
PCAT (mean±2SD)	83.47±47.53
Non-Dysarthria (PCAT=100%)	57 (32%)
Dysarthria (PCAT<100%)	119 (68%)
Penetration/Aspiration	
PAS (mean±2SD)	3.34±5.50
No Penetration or Aspiration (PAS 1)	66 (38%)
Penetration (PAS 2-5)	53 (30%)
Aspiration (PAS 6-8)	57 (32%)

Table 2 Comparison of demographics and penetrationaspiration in dysarthria and non-dysarthria group

Demographics and PAS	Dysarthria n=119(67.61%)	Non-Dysarthria n=57(32.39%)	<i>P</i> -value
Age			
Mean±2SD	63.7±21.80	66.7±27.22	0.2
Gender			
Male	80(67.23%)	37(64.91%)	0.76
Female	39(32.77%)	20(35.09%)	
Stroke			
Infarction	66(55.46%)	27(47.37%)	0.31
Hemorrhage	53(44.54%)	30(52.63%)	
PAS			
Mean±2SD	3.46±5.52	3.07±5.49	0.39
No Penetration or Aspiration (PAS1)	40(33.61%)	26(45.61%)	0.07
Penetration (PAS 2-5)	37(31.09%)	16(28.07%)	0.33
PAS2	34(28.57%)	12(21.05%)	0.16
PAS3	5(4.20%)	3(5.26%)	0.35
PAS4	0(0%)	0(0%)	-
PAS5	1(0.84%)	1(1.75%)	0.3
Aspiration (PAS 6-8)	42(35.29%)	15(26.32%)	0.13
PAS6	1(0.84%)	1(1.75%)	0.3
PAS7	26(21.85%)	6(10.53%)	0.19
PAS8	12(10.08%)	8(14.04%)	0.36

PAS; Penetration-Aspiration Scale