뇌신경재활
발표일시 및 장소 : **10 월 27 일(토) 14:50-15:00 Room C(5F)**

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Factors affecting the duration of VRE colonization in patient with stroke

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Objective
VRE Clearance is important because stroke patients with VRE colonization have limited intensive rehabilitation on account of isolation for prevention of infection transmission. However, there is a lack of research on which factors affect VRE clearance in stroke patients. In this study, we investigated which factors affect VRE clearance in stroke patients with VRE colonization.

Method
This study was performed on ischemic or hemorrhagic stroke patients with VRE colonization who are admitted to two hospitals between 2013 and 2017. If the VRE is grown in the rectal culture, the culture is performed periodically. The VRE clearance was defined as VRE-negative on three consecutive rectal cultures. The duration of VRE colonization is defined as the period from the VRE culture until the negative is identified. Age, sex, BMI, feeding type, ambulation, ICU care duration and antibiotic usage during VRE colonization were correlated in regression analysis with the duration of VRE colonization. Feeding type was classified into two types. The oral feeding group included patients who ingested food through the mouth regardless of dietary type. Nasogastric tube, PEG, and PRG were included as tube feeding group. Ambulation was classified into walking gruop and immobile group. Walking group was defined as patients who could walk regardless of the use of an orthosis such as cane and walker. Antibiotics use was included only when used for the duration of the VRE colonization. The antibiotic group was classified regardless of the method of administration and the type of antibiotics.

Result
A total of 52 patients were included in this study. Among 52 patients, 23 were male and 29 were female. The mean age was 65.63±13.45 years. The mean duration of the VRE colonization was 39.08±44.22 days and the BMI was 23.17±4.21. The mean ICU care period was 15.23±21.98(Table 1). On the day that VRE colonization was confirmed as negative, 27 patients were able to oral feeding, and 12 patients were able to walking. During the VRE Colonization, 36 patients were treated with antibiotics. Independent sample t-test showed the use of antibiotics ($p = 0.002$), oral feeding($p < 0.001$), duration of ICU care were associated with duration of VRE colonization(Table 2). Bivariate

correlation analysis showed ICU care($p < 0.001$) was associated with duration of VRE colonization(Table 3). Cox proportional hazard model showed Oral feeding($p = 0.001$), Use of antibiotics($p = 0.003$) and Duration of ICU care($p = 0.001$) as independent factors of duration of VRE colonization (Table 4).

Conclusion

This study shows that careful attention should be paid to oral feeding, duration of ICU care, and use of antibiotics to receive intensive rehabilitation at the appropriate time without interruption due to isolation by VRE colonization in stroke patient.

Table 1. General characteristics of all subjects

Characteristics	Value
Age	65.63±13.45
Sex	
Male	23
Female	29
BMI	23.17±4.21
Duration of VRE colonization	39.08±44.22
Duration of ICU care	15.23±21.63
Feeding type	
Oral feeding	27
Tube feeding	25
Ambulation	
Walking	12
Non-walking	40
Use of antibiotics	
Administrated	36
Non-administrated	16

Values are presented as mean±standard deviation or number.

BMI, Body mass index

Table 2. Comparison of duration of VRE colonization(Independent sample t-test)

		N	Duration of VRE colonization	P value
Sex	Male	23	46.52±48.02	0.284
	Female	29	33.17±40.84	
Feeding type	Oral feeding	27	18.15±24.39	<0.001**
	Tube feeding	25	61.68±49.86	
Ambulation	Walking group	12	24.75±34.52	0.204
	Immobile group	40	43.38±46.25	
Use of Antibiotics	Administrated	36	51.39±48.22	<0.05*
	Non-administrated	16	11.38±6.40	

Values are presented as mean±standard deviation.

*p<0.05, **p<0.001.

Table 3. Correlation between variables and duration of VRE colonization (Bivariate correlation analysis)

Variables	Pearson's r	P value
Age	-0.216	0.124
BMI	-0.107	0.450
Duration of ICU care	0.647	<0.001**

BMI, Body mass index

*p<0.05, **p<0.001.

Table 4. Factors associated with duration of VRE colonization (Cox proportional hazard model)

Variables	B	HR(95% CI)	p-value
Age	0.19	1.02(0.99-1.05)	0.148
Sex	0.122	1.13(0.59-2.17)	0.713
BMI	-0.32	0.97(0.88-1.06)	0.490
Oral feeding	1.317	3.73(1.72-8.11)	<0.001*
Ambulation	-0.646	0.52(0.22-1.28)	0.155
Duration of ICU care	-0.035	0.97(0.95-0.99)	<0.001*
Use of Antibiotics	-1.306	0.27(0.11-0.65)	<0.05*

BMI, Body mass index; HR, Hazard ratio

*p<0.05, **p<0.001