척수재활

게시일시 및 장소 : 10 월 19 일(토) 08:30-12:30 Room G(3F)

질의응답 일시 및 장소 : 10 월 19 일(토) 11:00-11:30 Room G(3F)

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Effect of BMI on rehabilitation outcome on persons with spinal cord injury

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Introduction

The prevalence of overweight and obesity in SCI patients is increasing. The prevalence of underweight is also higher (3.6-7.4%) compare to general population (0.7-2.4%). Those within the abnormal BMI range (<18.5 or ≥23.0) is more susceptible to medical complications such as hypertension, diabetes mellitus, pressure ulcer, associated with pain, unplanned hospitalizations, and lower community participation. But, limited research has examined the effect of body weight on rehabilitation outcomes. The pulpose of this study was to examine the effect of BMI on rehabilitation outcome.

Method

In this study, data was collected retrospectively from inpatient SCI patients of national rehabilitation center in Seoul, Republic of Korea from June 2015 to July 2017. Selection criteria for the study included: (1) ≥19 years of age (2) admitted to rehabilitation center for more than 30 days (3) onset <1 year. Patients were excluded if data were missing in weight or height. BMI was classified into 4 categories; underweight (<18.5kg/m2), normal (18.5-22.9 kg/m2), overweight(23.0-24.9 kg/m2), obese (≥25 kg/m2), according to Korean society for the study of obesity. Rehabilitation outcome includes KSCIM-III, wheelchair control, AIS Motor -Score. To analyze, we compared demographics across the BMI categories by using chi?square or analysis of variance. Multivariate regression models were conducted to examine the association of BMI groups with rehabilitation outcome at discharge. We used rehabilitation outcome at admission as a risk adjuster. In addition to BMI group, other predictors included age, sex, injury completeness and neurologic impairment.

Result

Table 2 shows the result of regression models predicting rehabilitation outcome. A significant association between BMI group and KSCIM-III is seen in obese group. Overweight group achieved lower KSCIM-III score than normal BMI group. Wheelchair control is positively associated with underweight group, and negatively associated with obese group. Other rehabilitation outcome showed similar tendency.

Discussion & Conclusion

Being overweight or obese is associated with diminished functional outcomes at discharge. Further study is needed with larger underweight population.

Table 1. characteristics by BMI categories.

Characteristics (n=301)	Underweight (n=26)	Normal (n=125)	Overweight (n=74)	Obese (n=76)	P
Prevalence	26 (8.64)	125 (41.53)	74 (24.58)	76 (25.25)	0.07
Weight(kg)	48.44(4.91)	59.40(6.69)	67.89(6.88)	77.70(10.69)	**0.00***
Age(y)	49.50(17.07)	54.00(17.39)	57.54(14.55)	54.43(18.56)	0.18
Sex(male)	19 (73.08)	88 (70.40)	61 (82.43)	48 (63.16)	0.07
Days since injury (days)	150.77 (108.23)	136.38(88.51)	128.16(85.29)	140.85(96.21)	0.70
Injury completeness					
Complete	9 (34.62)	40 (32.00)	20 (27.03)	18 (23.68)	0.55
incomplete	17	85	54	58	
Neurologic impairment					
Paraplegia	10 (38.46)	63 (50.40)	37 (50.00)	50 (65.79)	**0.05***
Tetraplegia	16	62	37	26	

Values are mean(SD) or number (%)

Table 2, result of regression models predicting rehabilitation outcome at discharge

	KSCIM-III on discharge	WC control on discharge	AIS M-Score
BMI group			
Overweight	**-3.914****	0.321	0.039
Obese	-1.944	**-0.192***	-0.033
Underweight	-0.758	**0.927*****	-0.840
Normal (ref)			
Patients characteristics			
Age	**-0.20****	1.208	0.012
Male	**5.490****	1.571	0.727
Tetraplegia	1.350	**-4.958*****	0.936
complete	**-4.084***	1.642(0.058)	**-3.085****

* p<0.05
** P<0.01
*** P<0.001