# 척수재활 발표일시 및 장소: 10 월 18 일(금) 14:45-14:55 Room C(5F)

## OP3-2-4

## Hospital Based Transitional Rehabilitation System Model Using Daily Living Home for Persons with SCI

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## Objective

For disabled person with spinal cord injury (SCI), return to society and adaption is most critical problem and object of fear. In the cases of overseas, it has been known that it usually takes 3 to 8 months to return to daily living after SCI. But in domestic circumstance, due to the lack of a transitional rehabilitation system(TRS), average period is over 31 months and there are many cases in which the patient lives a secluded life after discharge. In this project, we developed hospital based TRS model using daily living home for disabled person with SCI and verified effectiveness of it.

## Subjects & Methods

Through reviewing domestic researches, the return to daily living program of the Korea Spinal Cord Injury Association and cases of overseas institutions, 12 educational items (activity of daily living, wheelchair skill up, education for management of crisis, emotional support, sexual rehabilitation, driving, counseling for housing, sports or leisure for the disabled, return to school or work, counseling for linkage of economic and community resource, orthosis evaluation, education of spinal cord injury) were established and manuals of each item was developed. The first subject of the project was a 47-year-old woman who had been hospitalized for 26 months, six hospitals after SCI, April 2017. Before admission to the program, in-depth interviews with subject was done, the patient 's needs were identified and user-centered program was planned through the goal setting meeting (table 1). Even if it was not in the patient's needs, the program was coordinated by supplementing the part of the educational items. Physicians, nurses, physiotherapists, occupational therapists, social workers, technician of orthosis, independent living coach(disabled person with SCI) were participated in the program operation. Neurological, occupational, social welfare, psychological, quality of life (QOL) evaluation was done before and after program and achievement of goals were measured.

## Results

Her neurological level of injury was C8, sensory incomplete injury. There was no significant change in neurological evaluation. But meaningful improvement was observed in occupational, social welfare, psychological and quality of life evaluation (table 2). Also goal attainment scaling(GAS) of six core goal showed much improvement 34.95 to 73.01 (table 3). The cost of implementing the program was 7,068,134 korean won. After this program, she can return to home from long term hospitalization.

#### Conclusion

Comprehensive TRS offer improvement in ability of daily living and QOL to disabled person with SCI and reduce the fear of returning to society. And it can be expected that the shortening of length of stay and the reducing of medical expenses through application of hospital based TRS using daily living home at the appropriate time

Acknowledgment : This work was supported by the National Rehabilitation Center(NRC) grant funded by the Korea government (No.2019-0364-01)

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	ADL(IL)	ADL(IL)	ADL(IL)		Emotional	
	/ T, WH	/ T, WH	/ T, WH		support	
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	OT evaluation	ADL(IL)	ADL(IL)		ADL(IL)	
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		/ T, WH	/ Cooking	Visiting house of	support (Family)	
	PT	Education	PT	peer PT	PT	
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	Orthosis	/ T, WH Social work	/ T, WH Feedback	ADL(IL)	Intermediate	
	Consulation	(Society)		/ T, WH	evaluation	
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	/ T, WH	/ Shopping	tennis	/ CIC, Dressing	support	
			tennis PT	/ CIC, Dressing PT		
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Table 1. Monthly schedule for the first subject of the project

AIS : American Spinal Injury Association Impairment Scale, ADL : Activities of Daily Living,IL : Independent Living Coach, T : Transfer, WH : Wheelchair Skill Up, PT : Physical Therapist,OT : Occupational Therapist, CIC : Clean Intermittent Catheterization, D : Driving Simulator,S : Strengthening

				( Measur	ed Value / Ref	erence Value)
				Admission	Completion	Outcome
	AIS			C8(B)	C8(B)	No Change
Neurological Evaluation	UEMS			44 / 50	46 / 50	Improved
	LEMS			0 / 50	0 / 50	No Change
			Rt.	22.7 / 28.3	24.7 / 28.3	Improved
	Grasp Strength (Kgf)		Lt.	22.7 / 26.1	24.0 / 26.1	Improved
	Box & Block (Count)		Rt.	40 / 82.1	62 / 82.1	Improved
			Lt.	32 / 78.3	58 / 78.3	Improved
			Rt.	23.8 / 16.7	19.7 / 16.7	Improved
Occupational Evaluation	9-Hole Peg Board (Sec.)		Lt.	30.0 / 15.4	24.2 / 15.4	Improved
	K-SCIM			44 / 100	57 / 100	Improved
	Seoul-IADL	Currently Execution		11 / 45	5 / 45	Improved
		Potentiality		1 / 45	0 / 45	Improved
		Performa	nce	2 / 40	21 / 40	Improved
	COPM	Satisfaction		0 / 40	25 / 40	Improved
Social work Evaluation	RIC Functional Assessment Scale			26 / 32	29 / 32	Improved
	K-BDI			27 / 63	11 / 63	Improved
Psychological Evaluation	K-BAI			12 / 63	7 / 63	Improved
	K-BHS			8 / 20	7 / 20	No Change
		Physical H	ealth	25 / 100	50 / 100	Improved
	K-WHOQOL -BREF	Psychological		50 / 100	56 / 100	Improved
		Social Relationship		44 / 100	69 / 100	Improved
Quality of Life Evaluation		Environment		56 / 100	69 / 100	Improved
		Home Integration		0 / 10	3 / 10	Improved
	K-CIQ	Social Integration		7 / 12	9 / 12	Improved
		Productiv		0 / 5	1 / 5	No Change

#### Table 2. Results of the first subject of the project

AIS: American Spinal Injury Association Impairment Scale, UEMS: Upper Extremity Motor Score, LEMS: Lower Extremity Motor Score, K-SCIM: Korean Version of Spinal Cord Independence Measurement, I-ADL: Instrumental Activities of Daily Living, COPM: Canadian Occupational Performance Measure, RIC: Rehabilitation Institute of Chicago, K-BDI: Korean Version of Beck Depression Inventory, K-BAI: Korean Version of Beck Anxiety Inventory, K-BHS: Korean Version of Beck Hopeless Scale, K-WHOQOL-BREF: Korean Version of World Health Organization Quality of Life Abbreviated Version, K-CIQ: Korean Version of Community Innairetegration Question

#### Table 3. Goal Attainment Scaling(GAS) of the first subject of the project

Goal	Importance	Difficulty	-2	-1	0	+1	+2
1. Diet Food preparation, cooking and garbage disposal	2	2	Not at all	Shopping with Guardianship	Need more than moderate assistance for cooking	Need mild assistant for cooking and garbage disposal	Need no assistant for food prereration, cooking and garbage disposal
	Admission						
	Completion						
2. Personnel management Self-catheterization, clothing don/doff, some hygiene management	3	3	Not at all	Can do under guidance in a prepared environment	Can do without guidance in a prepared environment	Can prepare without assistant	Can Clear up after self-catheterization without assistant
	Admission						
	Completion						
<b>3. Transfer</b> Move from wheelchair to	3	2	Need more than moderate help	Can move to lower level with mild assistant	Can move to same level with mild assistant	Can move to more than 10cm higher level with mild assistant	Can move to more than 10cm higher level without mild assistant
various environments	Admis	ssion					
	Completion						
<b>4. Outing</b> Disabled persons call taxi,	2	1	Not at all	Outing with guardianship	Visiting familiar places with call-taxi for disabled person	Visiting unfamiliar places with call-taxi for disabled person	Outing using subway
subway use	Admis	ssion					
subway use	Completion						
<b>5. Wheelchair</b> Driving outdoors using a	3	3	Can not drive a manual wheelchair by oneself	Can drive a manual wheelchair indoors	Can drive in the hospital outdoors	Can travel within 500m outside the hospital	Can travel more than 500m outside the hospital
manual wheelchair	Admission						
	Completion						
6. Leisure Activities	2	2	Not at all	Program in hospital	Can have hobby outside the hospital	Can do para table tennis	Can Continue leisure activities without accompanying
Doing hobby and para table tennis	Admission						
	Compl	letion					