

Effect of Scapular Stabilization Exercise during Standing on Upper Limb Function and Gait Ability of Stroke Patients

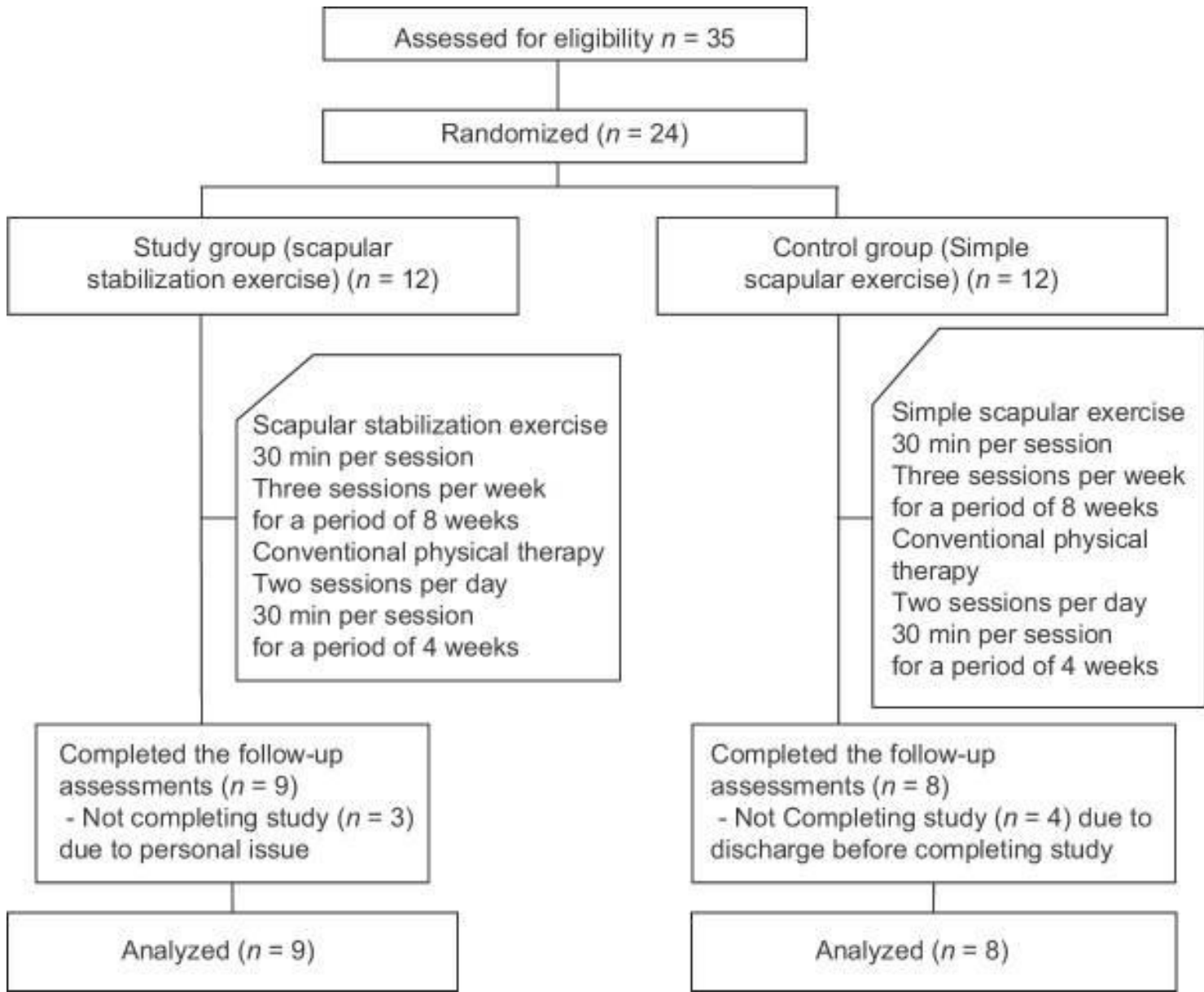
脳卒中患者に対する肩甲骨周囲筋のエクササイズが上肢機能や歩行能力に与える効果

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Characteristics	Study group (n=9)	Control group (n=8)	χ^2 (P)
Gender			
Male/female	8/1	2/6	17.00 (0.386)
Paretic side			
Left/right	6/3	6/2	17.00 (0.386)
Age (year), mean \pm SD	51.22 \pm 7.80	55.50 \pm 17.71	221.00 (0.256)
MMSE (score), mean \pm SD	26.77 \pm 2.68	27.75 \pm 2.86	68.00 (0.343)
Height (cm), mean \pm SD	169.0 \pm 6.98	162.0 \pm 7.59	204.00 (0.263)
Weight (kg), mean \pm SD	64.67 \pm 4.35	60.13 \pm 7.37	187.00 (0.271)
After onset (month), mean \pm SD	12.89 \pm 5.08	11.88 \pm 4.7	119.00 (0.308)

Mean \pm SD. MMSE: Mini-mental state examination, SD: Standard deviation



Scapula stabilization exercise

1. 疼痛範囲内での45度外転位での外旋運動
2. 座位で90度外転運動
3. 座位で肩・肘を伸展した状態で遠くの床を触る運動

いずれも疼痛範囲内で実施。1回30分、週3回、8週間。

Control group

1. 臥位で座位で肩の屈伸、内外転、内外旋運動を実施。

いずれも疼痛範囲内で実施。1回30分、週3回、8週間。

但し、両群ともに4週間の間に10回の個別の理学療法を受けている。

Parameters	Study group (n=9)	Control group (n=8)	Time, <i>F</i> (<i>P</i>)	Group × time, <i>F</i> (<i>P</i>)
TUG (s)				
Pretest	24.01 (7.90)	26.67 (11.61)	13.816 (0.000) [‡]	3.343 (0.069)
Posttest	21.43 (6.87)*	25.73 (11.02)		
Follow-up	18.95 (5.95)*	24.95 (10.00)		
FGA (score)				
Pretest	16.00 (6.08)	15.00 (7.39)	18.613 (0.000) [‡]	4.966 (0.024) [†]
Posttest	17.33 (6.55)*	16.13 (6.68)		
Follow-up	19.78 (6.88)*	16.38 (6.84)		
MFT (score)				
Pretest	9.67 (9.40)	14.13 (10.41)	16.777 (0.000) [‡]	6.946 (0.003) [‡]
Posttest	11.00 (8.83)*	14.38 (10.15)		
Follow-up	12.56 (8.50)*	14.75 (10.44)		

Values are mean (SD). **P*<0.05: Significant difference within group, [†]*P*<0.05: Significant difference between groups, [‡]*P*<0.01: Significant difference between groups. TUG: Timed up and go test, FGA: Functional Gait Assessment, MFT: Manual function test, SD: Standard deviation

CONCLUSION

Results of the present study indicated that scapular stabilization exercise during standing on a paretic side for 8 weeks had an effect on the gait ability of hemiplegic patients after stroke. Further studies needed to find the most proper exercise for stroke patients with gait disability and upper limb dysfunction.