Physical Therapy Department for Neuromuscular and Neurosurgical Disorder and Its Surgery

Doctoral Degree

2016

Author	**:**	**Adel Ahmad Hassan Ahmad Al-Geoshy**
Title	**:**	**Effect of Repetitive Arm Cycling on Gross Motor Activity in Stroke Patients**
Dept.	**:**	**Physical Therapy Department for Neuromuscular and Neurosurgical Disorder and its Surgery.**
Supervisors	**1.**	**Osama Mohammad Rashad**
	2.	**Abeer Abo Bakr Elwishy**
	3.	**Ehab Shaker Belal**
Degree	**:**	**Doctoral.**
Year	**:**	**2016.**
Abstract	**:**	

Objective:The objective of this study was to investigate the effect of repetitive arm cycling on gross motor activity in stroke patients. Subjects and methods: Thirty stroke patients from both sexes were assigned into two equal groups, a control and a study group. The control group received a traditional physical therapy program whereas, the study group received traditional physical therapy program, in addition to a repetitive arm cycling training conducted by the Motomed device. The patients were assessed clinically by the Motricity Index Scale , Modified Ashworth Scale (MAS) , Elbow flexion range of motion (ROM) by electrogoneometer and MOTOmed muscle tone, in addition to maximum cycling force measured by the motomed device which was recorded before and after treatment. Results: There was no significant difference after treatment in control group regarding MAS and maximum cycling force. However, there was a significant improvement after treatment in motricity index (MI), active elbow flexion ROM and MOTOmed muscle tone. In study group, there was a highly significant improvement in all parameters after treatment. When comparing both control and study groups after treatment, there was no significant difference regarding MAS and MI. However, there was a significant improvement in the study group ;compared to the control one; regarding active elbow flexion range of motion, maximum cycling force and MOTOmed muscle tone. Conclusion: Combining Repetitive arm cycling exercise with traditional physical therapy is effective in improving gross motor activity in stroke patients.

Key words	**1.**	**Stroke**
	2.	**Repetitive arm cycling**
	3.	**Gross motor activity.**
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Pagination	**:**	**182 p.**
Arabic Title Page	**:**	**تأثير التمرينات الدائرية المتكررة للذراع على النشاط الحركى الإجمالى فى مرضى السكتة الدماغية.**
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ELECTRONIC GUIDE TO THESES APPROVED BY PHYSICAL THERAPY DEPARTMENT FOR NEUROMUSCULAR AND NEUROSURGICAL DISORDER AND ITS SURGERY

PREPARED BY NERVEEN ABD EL SALAM ABD EL KADER AHMED

Author	**:**	**Heba Ahmed Metwally Khalifa**
Title	**:**	**Influence of repetitive transcranial magnetic stimulation with treadmill training on cognitive and motor performance in Parkinson's disease patients**
Dept.	**:**	**Physical Therapy Department for Neuromuscular and Neurosurgical Disorder and its Surgery.**
Supervisors	**1.**	**Moshera Hassan Darwish**
	2.	**Mohamed Soliman El Tamawy**
	3.	**Amira Mohamed El Gohary**
Degree	**:**	**Doctoral.**
Year	**:**	**2016.**
Abstract	**:**	

Background: Parkinson's disease (PD) is a progressive neurodegenerative disorder associated with motor and cognitive impairments. With progression of disease; antiparkinsonian medications become less effective. Developments of therapeutic strategies to improve motor and cognitive impairments are needed The aim of this study was to assess the influence of combined repetitive transcranial magnetic stimulation (rTMS) with treadmill training on cognitive and motor performance and to determine the correlation between cognitive and motor functions in PD patients. Methods: Forty five PD patients from both sexes were assigned into three equal groups. Group I (GI; control group) treated by a designed program of therapeutic exercises. Group II (GII) treated by aerobic exercise on treadmill in addition to the same program of (GI). Group III (GIII) received (5Hz) rTMS followed by the same program of (GII). The treatment program was conducted three sessions per week, for four weeks. Balance, bradykinesia and gait were assessed by Biodex balance system, keyboard tapping and two-dimensional motion analysis; respectively. Cognitive functions were assessed by Parkinson's disease cognitive rating scale (PD-CRS) and auditory event related potential (P300). All variables were assessed pre and post treatment in all groups. The results: pretreatment, there was a non-significant difference in the mean values of all variables in the three groups. Post treatment, a significant improvement in spatiotemporal gait parameters and bradykinesia was observed in the three groups with more improvement in (GIII) ($P<0.05$). Improvement in balance and cognitive functions was observed in (GII&GIII). Group III showed significant improvement in variables of dynamic balance indices compared to (GII); however improvement in dynamic limit of stability and cognition didn't reach the significant difference ($P>0.05$). Improvement in overall limit of stability (LOS) score correlate positively with improvement in working memory, visuospatial domains and PD-CRS total score; and negatively with improvement in P300 latency. Improvement in time to complete LOS test correlate positively with improvement in P300 latency and response time; and negatively with improvement in working memory domain and PD-CRS total score in (GIII). Conclusion: Treadmill training combined with rTMS has a positive effect in both cognitive and motor performance in PD patient.

Key words	**1.**	**Parkinson's disease**
	2.	**Repetitive transcranial magnetic stimulation**
	3.	**Treadmill training**
	4.	**motor performance**
Classification number	**:**	**000.000.**
Pagination	**:**	**219 p.**
Arabic Title Page	**:**	**تأثير التنبيه المغناطيسى المتكرر عبر الجمجمه مع التدريب على السير الكهربائى على الاداء المعرفى والحركى فى مرضى باركنسون.**
Library register number	**:**	**5253-5254.**

Author	**:**	**Ibrahim Mohamed Ibrahim Hamoda**
Title	**:**	**Efficacy of Transcranial Magnetic Therapy On Balance In Patients With Vestibular Dysfunction**
Dept.	**:**	**Physical Therapy Department for Neuromuscular and Neurosurgical Disorder and its Surgery.**
Supervisors	**1.**	**Nawal Abd El-Raouf Abou-Shady**
	2.	**Mohammed Khalil Yousif,**
Degree	**:**	**Doctoral.**
Year	**:**	**2016.**
Abstract	**:**	

Background: Most of patients with vestibular dysfunction suffering from balance disorders, Increase effort and exertion which affect the independency, so this study might be a guide in managing balance problem and consequently improve walking with less exertion and maximum function. Purpose: to investigate and discuss the effect of transcranial magnetic therapy on balance in patients with vestibular dysfunction. Methods: forty patients from both sexes were classified and divided randomly into two equal groups; Group I (study group): received transcranial magnetic therapy for 20 minutes, Intensity (two) gausses, Frequency (one) Hz, with a selected physical therapy program for improving balance and vestibular function (Balance training, Cawthorne-Cooksey Exercises) for one hour and group (II) (control group): received a selected physical therapy program as group (I) without transcranial magnetic therapy. This treatment procedure was applied three times weekly for three months every other day. The Biodex Balance System and Berge balance scales (BBS) were used for assessment before and after the treatment. Results: The percentage of improvement was significant in both groups post treatment program with no significant difference between both groups. Conclusion: Adding pulsed magnetic therapy to physical therapy program, has no significant effect on static and dynamic balance in patients with balance problems due to vestibular dysfunction.

Key words	**1.**	**Balance**
	2.	**Transcranial magnetic therapy**
	3.	**Vestibular dysfunction**
Classification number	**:**	**000.000.**
Pagination	**:**	**85 p.**
Arabic Title Page	**:**	**فاعلية العلاج بالمجال المغناطيسى عبر الجمجمة عل ى الإتزان في مرضى ا لخلل الدهليزى.**
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