ROMATEM
FİZİK TEDAVİ VE REHABİLİTASYON SAĞLIK GRUBU

ROMATEM Ekibi ICCN 2022 Uluslararası Klinik Nörofizyoloji Kongresi’nde

ROMATEM Parkinson Rehabilitasyon Ekibi, 4–8 Eylül 2022 tarihleri arasında İsviçre'nin Cenevre kentinde düzenlenen Uluslararası Klinik Nörofizyoloji Kongresi (ICCN 2022)'ne katılım sağladı.

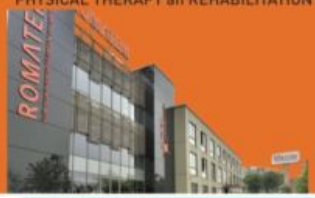
Kongrede, Parkinson hastalarında klasik rehabilitasyon ile C-Mill sanal gerçeklik destekli rehabilitasyon uygulamalarının yürüme ve denge üzerindeki etkilerini inceleyen araştırmamız bilim dünyasıyla paylaşıldı. Çalışmamız, nörolojik rehabilitasyonda teknoloji destekli uygulamaların önemini ortaya koyan değerli bulgular sundu.

Uluslararası araştırmacılar ve sektör temsilcileriyle bir araya gelme fırsatı bulduğumuz bu etkinlik, ROMATEM'in nörolojik rehabilitasyon alanındaki bilimsel çalışmalarının uluslararası görünürlüğüne katkı sağladı.

ROMATEM olarak bilimsel araştırmalarla desteklenen yenilikçi rehabilitasyon yaklaşımlarını geliştirmeye ve hastalarımıza en güncel teknolojileri sunmaya devam ediyoruz.

Not: Bu belge, ROMATEM Araştırma ve Geliştirme birimi tarafından yürütülen bilimsel çalışmaları ve akademik yayınları özetlemek amacıyla orijinal dökümandan müstakil rapor haline getirilmiştir.

ROMATEM
PHYSICAL THERAPY an REHABILITATION



Effects of classical rehabilitation and C mill virtual reality applied rehabilitation on gait and balance in Parkinson's Patients: A randomized controlled trial.

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INTRODUCTION

In our country, physical therapy applications are limited and performed in patient-intensive centers. Generally, patients do not continue rehabilitation because there is no special program for Parkinson's patients and they do not see the benefit they expect.
We aimed to show that besides drug therapy, rehabilitation contributes to improvement in daily living activities by using a different and technology-supported new program with the C-mill device, which has been used in our country for two years.

MATERIALS and METHODS

Four patients who received medical treatment with the diagnosis of Parkinson's disease were included. There were no additional diseases that limited walking and movement. During the rehabilitation period, no drug or dose changes were made in their treatment.
1st group: 2 patients: ID first digit odd: Classical rehabilitation
2nd group: 2 patients: ID first digit is even: Virtual reality assisted walking and balance exercise
The rehabilitation program was planned as 3 days a week, 1 session a day, 50 minutes each session, for a total of 7 weeks and 21 sessions. The results of the 1st session and the 21st session were compared.

Assessment:

a) Clinical measurements: Timed get up and go, Tinetti balance test, SF -36, FAC, HY stage, UPDRs -III test

b) Measurements with the C-Mill:
- limits of stability, limits of postural stability
-natural island mode: chat with the physiotherapist and walk as fast as he can; was conducted for a maximum of 6 minutes: walking speed, duration, distance, number of steps, step length, step width
-stepping stones mode: it is aimed to see the patient's own walking pattern and measure his steps: 0.6 km/h, after 1 min of normal walking; It was carried out for 4 minutes by pressing the "adapt to gait" button every 1 minute, 3 times in total.

RESULTS

Patient number	P1	P2	P3	P4
Age (year), sex	70, f	67, m	70, m	64, f
Disease year	4	6	3	10
Levodopa dosage:mg/day	400	300	300	500

Table 1: patient's data

In both groups; right and left stride length, two stride length, walking speed and distance, stance phase percentage and stance phase duration parameters; In clinical tests, a significant difference was found in timed up-and-go test, FAC, SF-36 tests.

	P1		P2		P3		P4	
	1.ses	21.ses	1.ses	21.ses	1.ses	21.ses	1.ses	21.ses
FR	20	75	40	95	70	80	0	50
RP	0	100	100	100	50	75	0	75
RE	0	100	100	100	33	100	0	100
VT	15	70	70	85	45	55	45	75
MH	48	84	88	88	40	56	52	80
SF	12,5	75	75	87,5	62,5	75	62,5	75
BP	90	100	100	100	87,5	87,5	62,5	77,5
GH	45	65	70	70	65	65	40	50

Table 2: SF-36 Score (Short Form Health Survey)

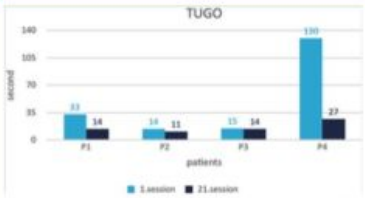


Chart 1: time up go test. (normal value: less 12 second)

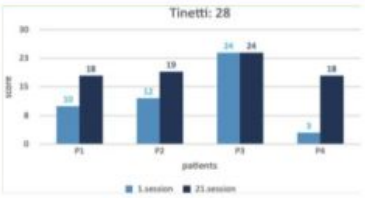
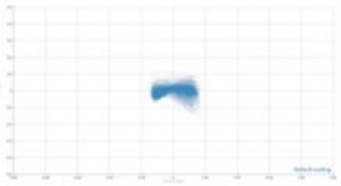


Chart 2: Tinetti test



P1 1.session "butterfly diagram"

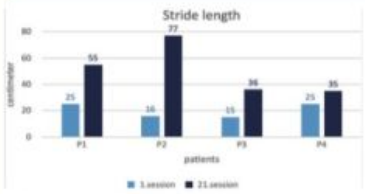


Chart 4: Stride length; two stride length in the patient's own gaitpattern in natural island mode-cm

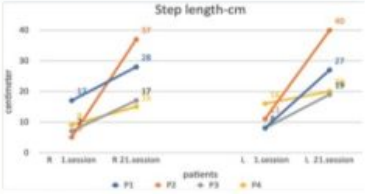
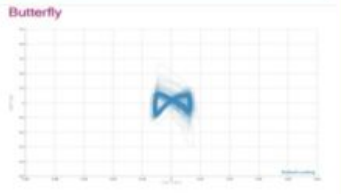


Chart 3: Step length; right and left stride length in the patient's own walking pattern in natural island mode-cm



P1 21.session "butterfly diagram"

What we gained with our research:

Patients:
- They started to participate in social life again
- Increased morale and motivation
- Compliance with drug treatment doses and hours improved
- They believed in the importance of rehabilitation: Our patients, who said that the physical therapies applied did not help much, saw the numerical data before and after the treatment and the improvement in their step intervals-walking patterns with their evidence.
-Although there was an improvement compared to the clinical examination scales, the numerical data in the C mill objectively proved the improvement.
-Our Parkinson's patients, who are in the geriatric age range, adapted very easily to the rehabilitation with VR technology.

Doctor-physiotherapist-hospital:

Our awareness of Parkinson's disease rehabilitation has increased.
- We have created a new rehabilitation plan for Parkinson's patients by combining classical and VR technology rehabilitation.
- In developed countries, walking data are made with technology and computer-assisted gait analysis devices. In underdeveloped and developing countries; based on clinical scales and visual examination data. We started to use the C mill device more efficiently by using it to measure both rehabilitation and gait-balance parameters.
-Our treatment plan, which started with four of our patients, turned into a scientific research project. We continue our research with 30 patients after obtaining the approval of the Ministry of Health ethics committee.
-We believe that rehabilitation should be done regularly in Parkinson's disease. Previously, we were sad to see that our patients did not come to rehabilitation or did not continue. Currently, we have scheduled appointments for 6 months later.

CONCLUSION

Both C mill virtual reality applied and classical rehabilitation improved gait and balance in Parkinson's Patients. With the improvement in clinical and daily living activities, seeing the data before and after treatment as graphic and numerical values increased the belief and compliance of patients and healthcare professionals to rehabilitation.

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