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Daniel Barbosa Tresmondi

**Effects of Aquatic Physiotherapy
and Land-Based Physiotherapy on
Motor Function in Individuals With
Parkinson's Disease of the
Akinetic-Rigid Subtype: a
Randomized Clinical Trial**

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Effects of Aquatic Physiotherapy and Land-Based Physiotherapy on Motor Function in Individuals With Parkinson's Disease of the Akinetic-Rigid Subtype: a Randomized Clinical Trial

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RESUMO

Introdução: Diferentes protocolos fisioterapêuticos apresentam melhoras da função muscular de indivíduos com Doença de Parkinson (DP) levando a ganhos de funcionalidade, equilíbrio e qualidade de vida. Contudo, a maioria dos estudos não diferenciam os subtipos da DP para intervenção, além disso, carecem de protocolos de intervenções que tratem com especificidade a musculatura extensora e seus desfechos como força, flexibilidade e controle neuromuscular para estes pacientes.

Objetivo: Descrever e comparar os efeitos de 12 semanas de fisioterapia em solo e em ambiente aquático voltadas a musculatura extensora, na função motora de indivíduos com DP do subtipo rígido acinético (RA). **Metodologia:** Trinta indivíduos com DP do subtipo RA foram alocados aleatoriamente em dois grupos: Fisioterapia aquática (FA) e Fisioterapia em solo (FS). Desfechos envolviam função motora através da UPDRS-III taxa de produção de torque e pico de torque das musculaturas flexoras e extensoras de tronco, além de parâmetros de mobilidade funcional, flexibilidade e equilíbrio. **Resultados:** Não foram apresentadas diferenças estatisticamente significativas na função motora de indivíduos com DP do subtipo RA, seja na comparação por tempo ou por grupo. Não houve também nenhum ganho significativo na taxa de produção de força e pico de torque das musculaturas de tronco em nenhuma das avaliações realizadas. Entretanto, integrantes tanto do grupo de FA quanto do grupo FS apresentaram ganhos estatisticamente significativos com as intervenções no equilíbrio, flexibilidade e mobilidade. **Conclusão:** Os presentes protocolos de FS e FA por falta de progressão clara de intensidade, não foram capazes de melhorar significativamente a função motora e força de indivíduos com DP do subtipo RA. Contudo, melhorias em outros parâmetros funcionais foram observadas.

Palavras-Chave: Doença de Parkinson, Fisioterapia, Rígido Acinético, Função

ABSTRACT

Background: Different physiotherapeutic protocols have demonstrated improvements in muscle function among individuals with Parkinson's disease (PD), leading to gains in functionality, balance, and quality of life. However, most studies do not differentiate PD subtypes when designing interventions and lack specific protocols targeting extensor musculature and its related outcomes, such as strength, flexibility, and neuromuscular control in these patients. **Objective:** To describe and compare the effects of 12 weeks of land-based and aquatic physiotherapy focused on extensor musculature on motor function in individuals with the rigid-akinetic (RA) subtype of PD. **Methods:** thirty individuals with the RA subtype of PD were randomly allocated into two groups: Aquatic Physiotherapy (AP) and Land-based Physiotherapy (LP). Outcomes included motor function assessed by the UPDRS-III, rate of torque development and peak torque of trunk flexor and extensor muscles, as well as measures of functional mobility, flexibility, and balance. **Results:** No statistically significant differences were observed in motor function among individuals with the RA subtype of PD, either over time or between groups. Likewise, there were no significant gains in trunk muscle force production rate and peak torque in any of the assessments performed. Nevertheless, participants from both the AP and LP groups showed statistically significant improvements in balance, flexibility, and mobility following the interventions. **Conclusion:** The present LP and AP protocols, due to the absence of a clear progression in intensity, were not effective in significantly improving motor function or muscle strength in individuals with the RA subtype of PD. However, improvements in other functional parameters were observed.

Key Words: Parkinson's Disease, Physical Therapy, Akinetic-rigid, Function

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LISTA DE ABREVIATURAS E SIGLAS

1. PD: Parkinson's Disease
2. AR: Akinetic-rigid
3. UPDRS: Unified Parkinson's Disease Rating Scale
4. AP: Aquatic Physiotherapy
5. LP: Land-based Physiotherapy
6. PT: Peak Torque
7. RPD: Rate of Torque Development

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ANEXO A

NORMA DA REVISTA ESCOLHIDA PARA SUBMISSÃO DO ARTIGO

Introduction

Types of article

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