



Available online at www.sciencedirect.com

ScienceDirect

journal homepage: www.elsevierhealth.com/journals/ctim



Tango for treatment of motor and non-motor manifestations in Parkinson's disease: A randomized control study

Silvia Rios Romenets^a, Julius Anang^a,
Seyed-Mohammad Fereshtehnejad^b, Amelie Pelletier^a,
Ronald Postuma^{a,*}

^a Department of Neurology, McGill University, Montreal General Hospital, Montreal, Quebec, Canada

^b Division of Clinical Geriatrics, Department of Neurobiology, Care Sciences and Society (NVS), Karolinska Institutet, Stockholm, Sweden

Available online 9 February 2015

KEYWORDS

Parkinson's disease;
Dance therapy;
Argentine tango;
Treatment

Summary

Objective: To determine effects of Argentine tango on motor and non-motor manifestations of Parkinson's disease.

Design: Randomized control trial.

Participants: Forty patients with idiopathic Parkinson's disease.

Setting: Movement disorder clinic and dance studio.

Intervention: Two randomized groups: group ($N=18$) with 24 partnered tango classes, and control self-directed exercise group ($N=15$).

Main outcomes measures: The primary outcome was overall motor severity. Secondary outcomes included other motor measures, balance, cognition, fatigue, apathy, depression and quality of life.

Results: On the primary intention-to-treat analysis there was no difference in motor severity between groups MDS-UPDRS-3 (1.6 vs. 1.2-point reduction, $p=0.85$). Patient-rated clinical global impression of change did not differ ($p=0.33$), however examiner rating improved in favor of tango ($p=0.02$). Mini-BESTest improved in the tango group compared to controls (0.7 ± 2.2 vs. -2.7 ± 5.9 , $p=0.032$). Among individual items, tango improved in both simple TUG time (-1.3 ± 1.6 s vs. 0.1 ± 2.3 , $p=0.042$) and TUG Dual Task score (0.4 ± 0.9 vs. -0.2 ± 0.4 , $p=0.012$), with borderline improvement in walk with pivot turns (0.2 ± 0.5 vs. -0.1 ± 0.5 ,

Abbreviations: PD, Parkinson's disease; MDS, Movement Disorder Society; UPDRS, Unified Parkinson Disease Rating Scale; Mini-BESTest, Mini-Balance Evaluation Systems Test; FOG-Q, Freezing of Gait Questionnaire; MoCA, Montreal Cognitive Assessment; BDI, Beck Depression Inventory; AS, Apathy Scale; FSS, Fatigue Severity Scale; PDQ, Parkinson's Disease Questionnaire; CGI-C, Clinical Global Impression of Change; TUG, Timed Up and Go.

* Corresponding author at: Department of Neurology, L7-312 Montreal General Hospital, 1650 Cedar Ave., Montreal, Quebec, Canada H3G1A4. Tel.: +1 514 934 8026; fax: +1 514 934 8265.

E-mail address: ron.postuma@mcgill.ca (R. Postuma).

<http://dx.doi.org/10.1016/j.ctim.2015.01.015>

0965-2299/© 2015 Elsevier Ltd. All rights reserved.

$p=0.066$). MoCa (0.4 ± 1.6 vs. -0.6 ± 1.5 , $p=0.080$) and FSS (-3.6 ± 10.5 vs. 2.5 ± 6.2 , $p=0.057$) showed a non-significant trend toward improvement in the tango group. Tango participants found the activity more enjoyable ($p<0.001$) and felt more "overall" treatment satisfaction ($p<0.001$). We found no significant differences in other outcomes or adverse events.

Conclusion: Argentine tango can improve balance, and functional mobility, and may have modest benefits upon cognition and fatigue in Parkinson's disease. These findings must be confirmed in longer-term trials explicitly powered for cognition and fatigue.

© 2015 Elsevier Ltd. All rights reserved.

Introduction

Parkinson's disease (PD) is characterized by motor dysfunction including tremor, rigidity, bradykinesia, and gait dysfunction, often contributing to falls.^{1–3} In addition, PD patients experience many non-motor manifestations, including cognitive, mood and sleep abnormalities.^{4–7} These non-motor manifestations are major contributors to disability and impaired quality of life.⁸ There is accumulating evidence that habitual physical activity is associated with lower risk of developing PD^{1,9} suggesting potential slowing of PD progression.¹⁰ Regular exercise also improves gait speed, strength, and functional capacity and reduces falls.¹¹ Tai chi training appears to improve balance and functional capacity in mild-to moderate PD.¹²

Evidence for effects of exercise on many non-motor manifestations of PD is limited. Moreover, traditional exercise programs are often unappealing for patients with PD,¹³ and over half of do not meet the recommended daily level physical activity.¹ Low expectations of benefit, lack of time, and fear of falling are important barriers to exercise participation among ambulatory, community-dwelling persons with PD.¹³

There is a connection between music and dopaminergic systems pivotal for establishing and maintaining behavior.¹⁴ Music-induced emotional states increase reward signals via ventral tegmental area dopamine release, partially explaining how musical experiences can be such potent pleasurable stimuli.¹⁵ Combining music with exercise in dance can therefore increase accessibility, enjoyability, and motivation, as well as improving mood and stimulating cognition.

In the general population, maintaining a regular schedule of dancing into old age is associated with preservation of cognitive, motor and perceptual abilities.^{16–19} Musical exercise improves cognitive function, mood and behavior in patients with all stages of Alzheimer's disease suggesting that dancing interventions are potentially far more than entertainment activity.^{20–23}

Argentine tango may be particularly helpful for improving balance and functional mobility in patients with PD.²⁴ Tango's technique requires specific steps that rhythmically entrain forwards/backwards walking; so it may be particularly useful for freezing of gait, and prevention of falls in the backward direction.^{25,26} In addition, tango requires working memory, control of attention, and multitasking to incorporate newly learned and previously learned dance elements, stay in rhythm with the music, and maneuver around others on the dance floor.²⁷ This may vary somewhat, depending on the instructor and type of tango (e.g. traditional Argentine tango vs. contemporary electro tango).

One of the tango's specific benefits is that dancer must not necessarily rely on specific dance elements he/she has to memorize (although it would help to dance); dancer can do it on a more easy and nevertheless enjoyable way, as well. Finally, social interaction and social supports involved in dance programs may have positive results on mood and compliance.^{27,28} Consistent with these possibilities, small trials in normal elderly and in PD patients have suggested improvements in balance, complex gait, spatial cognition, and executive function.^{27,29–31}

To further assess potential benefits of tango, we designed a 12 week randomized study of Argentine tango in PD, focusing on both motor and non-motor manifestations of PD.

Methods

This was a two-arm 12-week pilot study assessing tango classes compared to controls (self-directed exercise). This study was authorized by the research ethics board of the McGill University Health Center. All participants gave a written informed consent. This trial was registered with clinicaltrials.gov NCT01573260.

Participants

Patients were eligible for participation if they had idiopathic PD with Hoehn and Yahr stage I–III. All participants spoke either English or French sufficiently to fill out questionnaires and understand the instructions for dance classes. Exclusion criteria included patients who could not stand for at least 30 min or walk for ≥ 3 m without an assistive device, dementia (defined according to MDS dementia criteria),³² severe hearing and vision problems, change in dopaminergic therapy over the preceding three months, serious medical conditions which precluded dancing or could be worsened by exercise, more than 3 falls in the 12 preceding months (to ensure safety of intervention), and other medical conditions which could affect study participation (e.g. drug abuse/alcoholism). Recruitment was conducted from the movement disorders clinics of the McGill University Health Centre and from advertisements on the Parkinson Society Quebec website.

Intervention

Patients were randomized to tango intervention and to control groups. Argentine tango intervention included 24 partnered classes (maximum 8 couples per group). Dance partners were primarily spouses and friends, who were

Download English Version:

<https://daneshyari.com/en/article/2628946>

Download Persian Version:

<https://daneshyari.com/article/2628946>

[Daneshyari.com](https://daneshyari.com)