Effects of Kinesio-Taping on patients with Parkinson's disease and Pisa syndrome: a prospective randomized, controlled trial

Gianpaolo Maggi[1] PhD, Assunta Trinchillo[2] MD, Giuseppe Barra[3] PhD, Marcello Esposito[4] MsC, Gabriella Santangelo[5], PhD, Carmine Vitale[2,3], MD, PhD

1. *Department of Advanced Medical and Surgical Sciences, University of Campania "Luigi Vanvitelli", Naples, Italy*
2. *Department of Medical, Human Movement and Well-being Sciences, University of Naples "Parthenope", Naples, Italy*
3. *ICS Maugeri Hermitage Napoli, Naples, Italy*
4. *Clinical Neurophysiology Unit, Cardarelli Hospital, Naples, Italy*
5. *Department of Psychology, University of Campania "Luigi Vanvitelli", Caserta, Italy*

Objectives.

Rehabilitation techniques based on postural realignment and proprioceptive stimulation have been applied in various osteo-articular and neurological pathologies characterized by postural alterations but its use in neurological pathologies has so far been limited (Capecci et al. 2014). Hence, we aimed to assess the effects and safety of combined Kinesio taping (KT) and postural rehabilitation, on lateral trunk flexion, balance and motor scores, in patients with Parkinson's disease (PD) and Pisa syndrome (PS).

Materials.

Twenty PD patients with PS (reversible lateral trunk flexion ≥10°), were enrolled in the study and randomly assigned to 2 treatment groups.

Methods.

Twelve weeks of KT treatment was administered to 10 participants, in combination with postural elongation and trunk muscles stretching (Active-KT group), while 10 subjects received KT without active tension (Null-KT group), in combination with postural rehabilitation. The degrees of trunk bending in the coronal plane, Tinetti Scale, and UPDRS-III were considered as outcomes and evaluated at the enrollment (T0, basal evaluation), 1 month later (T1, end of weekly treatment period), 3 months later (T2, end of bi-weekly treatment period) and 6 months later (T3, long-term follow-up).

Results.

At t1, all the patients in the Active-KT group showed a significant improvement in lateral trunk flexion (LTF°), Tinetti Scale (total score and gait and balance sub-scale) and UPDRS-III (total score and gait, posture and pull-test sub-items) compared to baseline. Benefits persisted at both T2 and T3 for all outcomes. No significant changes were observed in the Null-KT group.

Discussion.

Our results suggest that the combined use of KT and postural rehabilitation may produce significant reductions in postural abnormalities of the frontal plane in PD patients with PS, together with a significant improvement in clinical and motor parameters. The clinical benefits obtained at the end of the rehabilitation program were maintained 3 months after the end of the treatment, potentially reducing the onset of fixed structural alterations.

Conclusions.

Early identification of postural abnormalities and their targeted treatment are the basis for preventing the onset of irreversible postural deformities that can have important consequences in terms of disability and quality of life of patients.

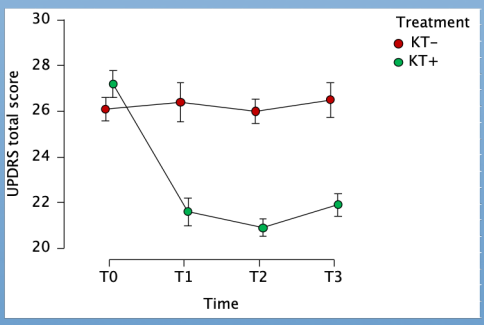

Figure 1. Repeated-measures ANOVA showing the interaction between treatment group (Active vs. Null) and time on UPDRS-III scores.

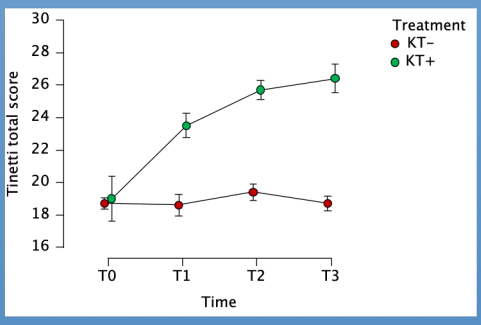

Figure 2. Repeated-measures ANOVA showing the interaction between treatment group (Active vs. Null) and time on Tinetti total scores.

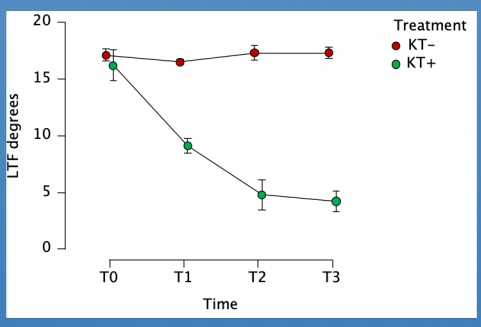

Figure 3. Repeated-measures ANOVA showing the interaction between treatment group (Active vs. Null) and time on LTF degrees.

References.

Capecci M, Serpicelli C, Fiorentini L, et al. Postural rehabilitation and Kinesio taping for axial postural disorders in Parkinson's disease. Arch Phys Med Rehabil. 2014;95(6):1067-1075. doi:10.1016/j.apmr.2014.01.020