

**Efficacy and safety of transcranial direct current stimulation in progressive supranuclear palsy**

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*Introduction:* Progressive Supranuclear Palsy (PSP) comprises a wide range of cognitive, behavioural and emotional deficits [1]. Since cognitive, behavioural and emotional impairment significantly contribute to worse health-related quality of life (HRQoL) and there are no efficacious treatment options, there is the need for alternative approaches. This is a randomized double blind trial testing the efficacy and safety of transcranial direct current stimulation (tDCS) in improving cognitive function PSP.

*Methods:* Twenty-five PSP patients were randomly assigned to two experimental conditions: anodic stimulation and sham. Anodic group received ten tDCS sessions (2 mA) on the left dorsolateral prefrontal cortex (LDLPFC) for 20 minutes for 10 consecutive days. They underwent a comprehensive motor, cognitive and behavioural assessment immediately before tDCS, after 10 days, after 45 days and after 3 months. Repeated measures ANOVA was used to analyze data.

*Results:* We failed to demonstrate a specific improvement of cognitive and motor functions. However, we observed a significant improvement of behavioural disturbances in the anodic group. Particularly, depression/dysphoria frequency scores of the Neuropsychiatric Inventory Questionnaire (NPI) improved in the anodic group ( $p < 0.05$ ) after 10 days of stimulation.

*Discussion:* Anodal LDLPFC tDCS improves depression/dysphoria frequency in PSP patients. This result confirms studies investigating the effects of tDCS on depression [2]. tDCS might represent a promising future therapeutic and rehabilitative approach in patients with PSP [3].

*Conclusion:* The lack of biomarkers, the difficulties of an early clinical diagnosis and the incomplete understanding of the exact pathophysiology of PSP make it difficult to define an adequate symptomatic treatment. Pharmacological therapy is largely ineffective and tDCS represents a promising treatment for PSP.

**References:**

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