

Multidisciplinary treatment for convergence insufficiency and movement disorders in Parkinson's disease: a pilot study

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Introduction: Parkinson's disease is characterized by movement disorders that affect Quality of Life (QoL); movement disorders can be due to visual symptoms that influence falls risk.

Asthenopia is the most common visual impairment in PD patients; eye strain while reading is accompanied by double vision. These disorders are often related to convergence insufficiency (CI). Patients with PD often have significant exodeviations especially at close range. Several studies have shown a reduced convergence amplitude in patients with PD.

Objective: The objective of this study is to evaluate the efficacy of a multidisciplinary intervention including orthoptic visual rehabilitation and physical therapy and its impact on QoL of patients with PD and falls risk.

Methods: Patients with PD diagnosed according to the Movement Disorder Society Clinical (MDSC) criteria, presenting IC and absence of concomitant ocular pathologies were recruited at Policlinico Umberto I (Rome) from December 2022 to April 2023.

The orthoptic rehabilitation training consisted in a weekly session lasting 45 minutes, over a period of 6 weeks, while physical therapy program consisted in 2 weekly sessions with the same duration.

The following outcome measures were used before (T0) and at the end of the treatment (T1): Convergence Insufficiency Symptoms Survey (CISS), Parkinson's Disease Questionnaire (PDQ-39), Parkinson's Disease Fatigue Scale (PFS-16), 12-item Berg Balance Scale and Performance-Oriented Mobility Assessment (POMA).

Results: 10 subjects were included. Average age was 69±6 (M:7; 70%). Statistically significant results were found as regards CISS, PDQ-39 and Berg Balance Scale.

Conclusions: The multidisciplinary rehabilitation program led to an improvement of QoL, CI and decreasing of falls risk after 6 weeks. These results show the effectiveness of orthoptic and physiotherapy treatments in patients affected by PD with CI. Further studies including a larger sample are necessary to demonstrate the efficacy of this intervention.