NEUROPLASTICITY DURING MOTOR REHABILITATION IN PARKINSON'S DISEASE

Juan Carlos Duran Quiroz, Juan Pablo Duran Ayllon, Ana Laura Delgadillo Borja
(La Paz-Bolivia)

ABSTRACT

Background: The motor cortex initiates and controls complex voluntary movements, sending afferents fibers to the striatum (which regulates the muscle tone, unconscious movements and automatic movements that requires previous learnings), and through the globus pallidus (direct and indirect pathway) returns to the motor cortex, supplementary motor area and to premotor cortex, regulating motor, cognitive and behavioral conducts. In Parkinson's disease, there is loss of dopaminergic neurons in the substantia nigra, causing a decrease in the ability to initiate movements.

Objective: to implement new dynamic motor tasks in planning, initiation and appropriate ending of voluntary movements with a complex cognitive dimension.

RESULTS

Results: in total, 10 patients were enrolled, of which 1 abandoned due to a business trip; The remaining 9 improved—their bradykinesia, postural instability, walking, fine tasks.

CONCLUSIONS

Conclusions: physical activity with new, alternating, non-routine and changing movements restructures motor circuits, allowing to improve motor symptoms in Parkinson's disease.

METHODS

Methods: We selected 10 patients with Parkinson's disease presenting motor symptoms such as bradykinesia, freezing of the gait, loss and slowness of movement. Such patients were on a low levodopa dosage for years. We implemented a protocol of physical activities based on new alternating movements (i.e. soccer, ping pong, play catching balloon, baseball, dodge ball and boxing movements) and walking reeducation, and correction of the balance axis. The patient was requested to perform those tasks with an appropriate frequency and intensity according to their physical characteristics and their daily living activities. The UPDRS Scale was used in order to measure motor improvement.

REFERENCES