



Protocol for the Intervention of Dysphagia in Parkinson. Application to 254 Patients

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PROTOCOL FOR THE INTERVENTION OF DYSPHAGIA IN PARKINSON. APPLICATION TO 254 PATIENTS

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Key words: Parkinson's, therapy, motor skills, orofacial, speech therapy

ABSTRACT:

Introduction: The objective of this study was to carry out an orofacial motor therapy application protocol, including in the myotherapeutic management the application of electrostimulation to facilitate movement in Parkinson's patients.

Materials and methods: Research carried out in the period between 2016 and 2019 in the speech therapy service of a Parkinson's patient care institution in the city. The sample consisted of 254 Parkinson's patients, with no other underlying clinical pathology.

A transcranial photobiomodulation therapy application program with LLLT was applied to these patients; differential muscle therapy; structural functionality; EMS type electrostimulation, in nerve conduction programming. Swallowing acoustic analysis was performed, at the beginning and at the end, the data were reviewed and compared with those presented at the beginning.

Results and conclusions: According to the information obtained and analyzed from this study, it is evident that the application of this protocol of transcranial photobiomodulation therapy and electrical stimulation to driving management allows the speech therapist to perform a precise and rapid intervention that will speed up the recovery process of the protective mechanism of the airway in the Parkinson Patient.

Introduction:

Parkinson's is a neurodegenerative disease, which leads to the loss of dopaminergic neurons, without producing this neurotransmitter necessary for movement control. Characteristics include the appearance of oropharyngeal dysphagia, characterized by difficulty in initiating movement, hyposmia, anterior drooling, tongue pumping, anterior escape, early emptying of the bolus, puddling, penetration and aspiration.

Since Parkinson's disease is a pathology that affects the onset of movement, a program is developed where both the modulation of dopamine at the brain level and the initiation of movement in swallowing activity can be facilitated.

Transcranial Photobiomodulation therapy is a neuromodulatory technique that facilitates the conduction of the nerve impulse from the cellular biochemical aspects. And it is being used more and more within the intervention of neurodegenerative pathologies. A few years ago it has been applied from the human connectome concept where circuits and neural networks responsible for movement were established and within them the swallowing processes.

Electrostimulation allows generating a liminal and subliminal stimulus to achieve a muscle contraction. According to the programming guidelines, it can be programmed to conduction, stretching, relaxation, isometric or isotonic exercise and based on stimuli that favor nerve

conduction, it is determined to take this programming to facilitate the initiation of voluntary movement.

Acoustic analysis as an objective test that evaluates swallowing sounds and allows us to differentiate the acoustic characteristics of swallowing, especially of the pharyngeal phase, showing 3 curves, which is why it is used as an evaluation reference for the present study.

Materials and methods:

The objective of this study was to carry out a protocol for the application of orofacial motor therapy, including in the myotherapeutic management the application of electrostimulation to facilitate movement in Parkinson's patients.

It is a documentary, descriptive and retrospective investigation, of a quantitative nature, carried out in the period between 2016 and 2019 in the Speech Therapy service of a Parkinson's patient care institution in the city.

The sample consisted of 254 Parkinson's patients, with no other underlying clinical pathology. To whom the acoustic analysis of swallowing was applied, analyzing the basic characteristics of swallowing sounds in terms of frequency and amplitude of the waves (Moussavi 2012). In these patients, a transcranial photobiomodulation therapy application program with classification LLLT was applied. IIIA, 650 nm, 5 mw in dopamine circuit, and voluntary management of movement and swallowing, for no more than 1.30 minutes per point of the circuit; Differential muscle therapy, performing nerve conduction, stretching, facilitating elasticity and later working towards isotonic exercise; structural functionality towards laryngeal movements during swallowing process (elevation, anteriorization and laryngeal stabilization); EMS type electrostimulation, direct current, at an intensity of 1 mA, and at frequencies of 2Hz with a contact electrode on the anterior suprahyoid muscles. The application times occurred in sessions of 4 days, with application of 3 series of 90 seconds, for a total application of 270 seconds. The acoustic analysis of swallowing was taken again, the data were reviewed and compared with those presented at the beginning.

Results and discussion:

According to the comparative analysis of the two swallowing tests, there is evidence of a decrease in latencies within the trigger of swallowing sounds, an increase in the amplitude of the third swallowing sound and in the intensity of swallowing. Two patients who changed their medication showed increased latencies, with increased central apnea time.

This application allowed a stabilization in the Parkinson's swallowing process and in 83% of cases swallowing improvement. According to the information obtained and analyzed from this study, it is evident that the application of this protocol of transcranial photobiomodulation therapy and electrical stimulation to driving management allows the speech therapist to perform a precise and rapid intervention that will speed up the recovery process of the protection mechanism of the airway in the Parkinson Patient.

Conclusion:

This protocol is proposed as an option for intervention and stabilization of swallowing processes in Parkinson's patients.

It is recommended to continue researching and include other motor aspects that are compromised, such as dysarthria.

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