3 - Clinical Anatomy

OC-102 - (23813) - INVESTIGATION OF BIOMECHANICAL PROPERTIES OF AFFECTED MUSCLES IN PARKINSON'S PATIENTS WITH MYOTONPRO DEVICE

R. İnce (Turkey)[1]; Ö.F. Cihan (Turkey)[2]; S. Geyik (Turkey)[3]; N. Örtlek (Turkey)[3]

1 - Osmaniye Korkut Ata University, Vocational School of Health Services, Department of Medical Services and Techniques; 2 - Gaziantep University, Faculty of Medicine, Department of Anatomy; 3 - Gaziantep University, Faculty of Medicine, Department of Neurology

Rümeysa İnce
Osmaniye

Ömer Faruk Cihan
Gaziantep

Sırma Geyik
Gaziantep

Nurnihan Örtlek
Gaziantep

The authors have no conflicts interest.

Parkinson's disease is neurodegenerative disorder affecting musculoskeletal system, especially head, neck and upper extremities, due to loss of dopaminergic neurons. Viscoelastic properties of muscles are important for muscle power and performance during physical activity. It’s known that there’s relationship between viscoelastic properties with strength and dynamic stability. The aim of this study was to investigate viscoelastic properties of head, neck and upper extremity muscles on side of tremor and dynamic stability in Parkinson's disease patients.

Sixteen individuals (mean age:63.75±1.9years) who applied to Gaziantep University Department of Neurology and were diagnosed with Parkinson's disease were included. Ethics Committee approval was obtained (2024/315). In accordance with clinical anamnesis of individuals, patients with unilateral intense tremor were analysed bilaterally (M.orbicularis oris-M.massater-M.semispinaliscapitis-M.sternocleidomastoideus-M.trapezius-M.deltoideus-M.bicepsbrachii-M.tricepsbrachii-M.extensordigitorum-M.brachioradialis). Viscoelastic properties stiffness, tonus and elasticity were measured with MyotonPRO device. After two weeks, measurements were repeated and reliability was evaluated and consistency was observed.

Tonus and stiffness values of M.trapezius were statistically significantly greater in limb with dynamic stability than in limb with tremor. No significant difference was found in other muscles.
Tremor, rigidity and bradykinesia seen in Parkinson's disease patients may cause changes in biomechanical properties of muscles. In this study, some head, neck and upper extremity muscles were analysed. Only tonus and stiffness values of M. trapezius were found to be significantly higher in limb with dynamic stability, which is thought to be due to fact that M.trapezius may be more affected by being posture muscle. It’s thought that this study will contribute to literature as pioneering study.

Palavras-chave : viscoelasticity, biomechanics, parkinson's disease