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## **C**omparison of the effectiveness of radial shock waves vs platelet-rich plasma in rhizarthrosis

### **Abstract:**

**Introduction:** Rhizarthrosis is a chronic degenerative hand disease of the trapeziometacarpal joint (TMC), affecting the first finger, causing disability and dependence. Characterised by wear and tear of the articular cartilage that allows gliding between the two bones and cushioning of the joint, degenerative osteoarthritis causes limited mobility and pain with consequent consumption of resources. Radial shock waves have shown evidence in calcific tendinitis, plantar fascitis and subacromial tendinitis due to the biological effect they produce with consequent extracellular cavitations, diffusion of free radicals, intercellular reactions, and molecular changes, which result in biological changes in the tissue.

**Aim:** To evaluate the effects of the application of oral shock waves (OCE) compared to intrarticular infiltration of platelet-rich plasma (PRP) in patients with moderate severe rhizarthrosis.

**Method:** This is a prospective, randomised study which will include patients attending rehabilitation clinics referred from primary care in the northern area of Gran Canaria, of both sexes over 40 years of age, with rhizarthrosis above grade II on the Kellgren–Lawrence scale and on the Eaton scale. Patients will be randomly divided into two groups: one group will be treated with OCE (radial pressure waves) at an intensity of 1 mmJ/mm<sup>2</sup>, in the TMC joint, in a total of 4 sessions spread over 4 weeks, one per week and the other group with infiltrations in the TMC joint under ultrasound control, in a number of three, of 1 ml of PRP (platelet-rich plasma) each syringe, one infiltration per week for 3 weeks. They must also not suffer from infection at the site to be applied, nor systemic infection at the time of application, and must not have previously received any type of treatment on the hand. They will be assessed at baseline with a VAS (visual analogue pain scale), a Q-DASH questionnaire, at 6 months and at 10 months.

Rhizarthrosis is a primary arthritis of idiopathic cause that affects 10% of the adult population, mainly women between 40–45 years of age, the prevalence of this symptomatic disease is

6-8% of the population, it is the cause of osteoarthritis in the hand that causes most functional limitation. Diagnosis consists of a clinical history with anamnesis and physical examination, and radiography helps to typify the evolutionary stage.

Clinically, these patients suffer from pain and functional limitation, which translates into an impairment in daily activities such as opening a jar, screwing, opening a door, turning keys, cutting with a knife, holding a cauldron, etc. This has a great impact on their work due to the great incapacity it generates.

### **Biography**

I have a degree in Medicine and Surgery from the ULPGC and am a specialist in Physical Medicine and Rehabilitation. Specialised in the locomotor system, at the International Centre of Excellence for Arthrosis of the Centre Hospitalier Universitaire de Nancy, France since 2007. Arthrosis and joint pathology, at the Centre d'Excellence International d'Arthrosis du Centre Hospitalier Universitaire de Nancy, France since 2007. His national and regional work includes shockwave treatment of calcific tendinitis of the shoulder, plantar fasciitis, epicondylitis, trochanteric bursitis. He has international experience in partial rotator cuff rupture and PRP treatment of the ischial joint tendon. He performs ultrasound-guided interventional procedures in his regular hospital practice for the treatment of pain. She specialises in vestibular rehabilitation at the Antolí Candela Clinic in Madrid, and has been responsible for the implementation of the vestibular rehabilitation unit at the HUDGC since 2008. Experimentation in this field has allowed me to tackle the multidisciplinary study of vertigo and dizziness, its assessment, diagnosis and treatment based on functional rehabilitation and frequent vestibular pathologies in different places in Spain, such as the Fundación Hospital de Alcorcón, Hospital de la Fe in Valencia and Seville, among others.