EFFECTS OF ACTION OF ULTRASOUND WITH CAPSAICIN IN THE TREATMENT OF POST TRAUMATIC PATHOLOGY

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Summary: There are numerous methods of administering drugs to the body,both passive and active. A recent review of the literature on phonophoresis reports that 75 % of the studies reviewed reported positive effects, ultrasound energy with drugs like gel or cream can travel through body tissue. Capsaicin was the active ingredient in hot chilli peppers has selection actions on unmyelinated C fibres and thinly myelinated A primary sensory neurones.

Keywords: phonoporesis, capsaicin, pain

INTRODUCTION

Problems of the joints have as result an important symptom which consists in the reduction of the articular mobility and muscle contraction.

The pain that appears in the joints can be approaches in two ways: either one could try reduce the number of the painful stimuli,or one could expand the sensitivity limit of the pain receivers.

Ultrasound consists of inaudible, acoustic, high-frequency vibrations that may produce either thermal or non thermal physiologic effects. Since the pioneering work of Fellinger and Schmid, who first added ultrasound to the management of digital polyartrhritis with hydrocortisone, phonoporesis has been used to enhance transdermal drug delivery in sports medicine and orthopedic rehabilitation. Phonophoresis is belived to accelerate functional recovery by decreasing pain and promoting healing.Ultrasound has been used for phonophoresis with a variety of techniques and settings, the most commonly used ultrasound method, corresponds to therapeutic ultrasound (frequency in the range of 1-3 MHz and intensity in the range of 1-2 W/cm^2).In our study, a frequency of 1 MHz was used. Mitragoti et al. reported that the phonophoretic enhancement in the therapeutic frequency range varies inversely with ultrasound frequency.

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A recent review of the literature on phonophoresis reports that 75 % of the studies reviewed reported positive effects, ultrasound energy with drugs like gel or cream can travel through body tissue.

Capsaicin was the active ingredient in hot chilli peppers has selection actions on unmyelinated C fibres and thinly myelinated A primary sensory neurones. Although initial application of capsaicin in human is algesic,repeated application leads to desensitization, and high concentrations can block C fibre conduction and result in long lasting sensory deficits.These properties of capsaicin may explain its efficacy in treating some painful conditions in humans,for example cluster headache,reflex sympathetic dystrophy, postherpetic neuralgia and diabetic neuropathy.

Capsaicin is a cell specific peripheral analgesic. Agonism, that is ability to open capsaicin operated channels,is required for efficacy. There is growing evidence for efficacy of capsaicin in a range of pain conditions.

A better window between analgesic doses and doses which produce sides effects in required for an orally active therapeutic drug. However, topical applications are effective and without side effects.

The aim of the study consists in the examination of the effects produced by the action of sonophoresis with capsaicin in the treatment of the post traumatic pathology, that is removal of pain and muscle contraction.

MATERIAL AND METHODS

We have studied a number of 20 patients who where not hospitalized they had post traumatic injuried at the shoulders they received sonophoresis with capsaicin.

All the patients were included in the standard therapy program (drugs and rehabilitation) over a period of 10 days.

Group A – 30 patients was taken phonoporesis with capsaicin and Group B – 30 patients was taken phonoporesis with ketoprofen, both intensity was 0.6 W/cm^2 on the shoulders, 6 minutes every day.

The assessed parameters,at hospitalization and discharge were: pain, joint mobility, muscle strength and Womak scale.

RESULTS AND DISCUSSIONS

In group A patients presented a significant improvement of pain according VAS scale,on the other group B who present an insignificant improvement of pain for the short time.

We can consider phonoporesis with capsaicin a significant method of therapy in post traumatic pathology with an important benefit towards long term pain relief for the patient.The purposes of this studies were to build a theoretical foundation for understanding phonophoresis and to review the efficacy of phonophoresis with capsaicin as a clinical treatment in physical therapy.

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