

## Oral Versus Iontophoresis Nonsteroidal Anti-Inflammatory Drugs in Tennis Elbow

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**Abstract :** Nonsteroidal anti-inflammatory drugs (NSAIDs) are among the most commonly prescribed oral and topical drugs worldwide. Moreover, NSAIDs are responsible for most of all adverse drug reactions. For several decades, there are numerous attempts to use the cutaneous layers as a gate into the body for the local delivery of the therapeutic agent. Transdermal drug delivery is a validated technology contributing significantly to global pharmaceutical care. Transdermal Drug Delivery systems can be improved by using therapeutic agents. Moreover, Transdermal Drug Delivery systems can be improved by using chemical enhancers like ultrasound or iontophoresis. Iontophoresis provides a mechanism to enhance the penetration of hydrophilic and charged molecules across the skin. Objective: to compare the drug administration by 'iontophoresis' versus the oral rule. Methods: This study was conducted at the Faculty of Physical Therapy, Modern University for technology and information, Cairo, Egypt, on 20 participants (8 female & 12 male) who complained of tennis elbow. Their mean age was (25.45 ± 3.98) years, and all participants were assessed in many aspects: Pain threshold was assessed by algometer. Range of motion was assessed by electro goniometer, and isometric strength was assessed by a portable hand-held dynamometer. Then Participants were randomly assigned into two groups: group A was treated with oral NSAID (diclofenac) while group B was treated via administration of NSAIDs (diclofenac) via an iontophoresis device. All the participants were subjected to blood samples analysis in both pre-administration of the drug and post-administration of the drug for 24 hours (sample/every 6 hours). Results: The results demonstrated that there was a significant improvement in group b, "iontophoresis NSAIDs group," more than in group B, "oral NSAIDs group," in all measurements ' pain threshold, strength, and range of motion. Also, the iontophoresis method shows higher maximum plasma concentrations (Cmax) and concentration-time curves than the oral method.

**Keywords :** diclofenac, iontophoresis, NSAIDs, oral, tennis elbow

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