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A comparative study on the influence of kinesio taping® and laser therapy on knee joint position sense, pain intensity, and function in individuals with knee osteoarthritis

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Introduction: Conservative rehabilitation methods are assumed as a fundamental part of treatment in patients with knee osteoarthritis (OA). The objective was to investigate the influence of Kinesio Taping® (KT®) and low level laser therapy (LT) on pain intensity, function, and knee joint position sense (JPS) in such patients.

Materials & Methods: Twenty-six male patients (Mean±SD of age: 48.5±4.6 years) with unilateral knee OA were randomly divided in to two groups of KT® (N=13) and LT (N=13). Both groups followed their own specific therapeutic protocol in addition to routine physiotherapy program for 10 sessions. The outcome measurements included pain intensity, function, and knee JPS; which were evaluated using visual analogue scale, 'Up and Go test', and reproduction of target angle at baseline and after completing the interventions; respectively.

Results: Both methods can significantly improve pain intensity, reduce the time to perform 'Up and Go test', and reduce the angle reproduction error of 60° knee flexion ($P<0.001$). Mean difference for target angle reproduction error was more significant in KT group compared to LT group ($P<0.001$); while no significant mean difference was found for other measurements ($P>0.05$).

Conclusion: KT® and low level laser can improve pain, knee JPS, and function in clients with knee OA; however there is better effect of KT® on knee JPS.

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Thermal medicine, the heat shock response and the modulation of inflammation: A therapeutic come back in a remix

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Thermal therapies have been constitutive components of most ancient systems of medicine and their use is re-emerging. New evidence has captured the interest in the use of therapeutic heat for its ability to sensitize aberrant cells to radiation injury, provide costimulatory signals to stir immunocompetence, to precondition tissue in defense against various endogenous injury and to downregulate pro-inflammatory genes. Copious studies have investigated the modulation of both local and systemic inflammation by exogenous, local or systemic heat applications and these modalities should reclaim their place in the physical medicine shack of available therapeutic tools. The induction of heat stress markedly elevates tissue expression of many heat shock proteins which comprise a superfamily of molecular chaperones found in most tissues. Heat shock proteins are highly cytoprotective molecules eliciting the appearance of defended tissue phenotypes against several injurious subcellular stresses. The heat shock response (HSR) can powerfully modulate inflammation by triggering over expression of several heat shock protein which in turn mediate the inhibiting expression level of factors such as NFkB and thus a cascade of pro-inflammatory gene profiles. In this presentation, we review the biology of thermal stresses, the current evidence substantiating the uses of heat as an adjunct therapy in several pathological processes with a focus on inflammation.

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