

Volume 26  
Numero 2-3  
AGOSTO-DICEMBRE 2012



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## GIORNALE ITALIANO DI MEDICINA RIABILITATIVA

Rivista di Formazione, Informazione, Aggiornamento professionale della SIMFER

9th Mediterranean Congress of PRM  
40<sup>th</sup> National Congress SIMFER

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## ABSTRACT BOOK

THE REHABILITATION MEDICINE  
IN THE MEDITERRANEAN AREA:  
STRATEGIES AND EXPERIENCES

LA MEDICINA RIABILITATIVA  
NELL'AREA DEL MEDITERRANEO:  
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ITALY 21-25 October 2012



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SOCIETÀ ITALIANA DI MEDICINA FISICA E RIABILITAZIONE  
The Italian Society of Physical and Rehabilitation Medicine

40<sup>th</sup> National Congress  
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EDIZIONI MINERVA MEDICA

## EFFECTS OF HYALURONIC ACID INTRA-ARTICULAR INJECTION FOR THE TREATMENT OF TEMPOROMANDIBULAR JOINT OSTEOARTHRITIS: RELATIONSHIP WITH CERVICAL SPINE PAIN

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**Introduction.** Temporomandibular disorders (TMD) are musculoskeletal pain conditions characterized by pain and dysfunction in the face muscles and/ or in the temporomandibular joint (TMJ). Several studies identified an association between TMD and cervical spine disorders (CSD) in terms of limited range of motion (ROM) (40% of cases) and neck pain (10% of cases). Actually the underlying cause of neck pain remains unclear. Chronic neck pain results common in the general adult population with prevalence of 48% for women and 38% for men, with persistent complaints in 22% of women and 16% of men. Multiple modalities of treatments, without certain evidence of efficacy, are now proposed for the management of chronic neck pain. When neck pain is observed in patient with temporomandibular disorder, treating the last problem, is frequent a regression of the neck symptomatology. Many studies show the efficacy of hyaluronic acid (HA) injections in TMJ related to the biological properties of this molecule on cartilage and synovial membrane. The aim of the present study was to assess whether a treatment protocol consisting in five weekly arthrocenteses plus HA injections, using medium-molecular weight HA, could be effective in reducing pain symptoms, both in TMD and CSD.

**Materials and methods.** A total of 12 patients with chronic pain and limited ROM in the neck of more than six months' duration (75% females; mean age 57.3 years) entered the study protocol. All patients underwent five weekly single-needle arthrocenteses plus medium-molecular weight HA. The outcome measures were muscular strength, intensity of neck pain at rest measured by a 10-point visual analogue scale (VAS) and active cervical ROM measured by a specific goniometer (Inclimed®). These outcomes were assessed before treatment, and 1 month after the intervention. The Neck Pain Disability Questionnaire (NPDS) was also employed to investigate neck functional disability.

**Results.** None of the 12 included subjects withdrew from the study. The non-parametric Wilcoxon signed-rank test was used to analyse our data. The decrease in post-treatment TMJ and neck pain at rest levels (VAS median value pre-treatment= 5.5; VAS median value post-treatment= 2.5) show statistically significant changes ( $p < 0,05$ ), so it is in line with literature data supporting the effectiveness of HA injections for muscular diseases. Findings suggest also a trend toward an increase in some cervical ROM, especially in neck rotation (25th percentile pre-treatment= 62.5, 25th percentile post treatment= 70.0; 75th percentile pre-treatment= 80.0, 75th percentile post treatment= 80.0), these results support the hypothesis of neuroanatomical connections and nociceptive relationships between the orofacial area and cervical muscles.

**Conclusions.** Correlation between TMD and CSD has been reported early in literature. We performed a pilot study to explore whether TMJ hyaluronic acid injections was effective, not only for TMD, but also for related chronic neck pain treatment. Considering the limits of this investigation, it is necessary to extend the sample size, as well as the length of follow up period. We consider that such studies in the future will yield novel findings concerning the mechanisms of chronic pain occurring in patients with neck motility disorders. This data will contribute enormously to understand the relationship between TMJ and neck pain disorders and to identify the first site of therapy.

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