LASER

Conservative treatment of low back pain caused by intervertebral disk displacement: comparison among Nd:YAG laser therapy, TENS and NSAIDs

ALESSANDRO ZATI (*), ILARIA CARDILLO (**), DAMIANO FORTUNA (***), TERESA WANDA BILOTTA (*)

ABSTRACT. – *Background: low back pain with nerve root involve ment is a very frequent symptom in patients affected by herniated intervertebral disk (1,2). In many cases symptoms resolve spontaneously in 12 mounths (4,5). For this reason conservative management is preferred to surgery (6). There are many methods of treatment but few, NSAIDs (12,13,14) TENS (transcutaneous electrical nerve stimulation) (15,16) have proven to be efficacious. Positive results regarding the employment of power laser in laser therapy (17,18,19,20,21,22) have led us to assess the efficacy of the laser in the treatment of this disease. Objective: to compare the efficacy of Nd:YAG pulsed wave (pw) laser, TENS and NSAIDs in the symptomatic treatment of intervertebral disk displacement. Materials and Methods: 60 patients with L4-L5 or L5-S1 intervertebral disk displacement affected by subacute back pain with nerve root involve ment were divided into 3 groups. Each group underwent one of the following types of treatment for 15 days: NSAIDs (Ketoprofene), TENS or Nd:YAG laser. The assessment of the pain was carried out using two scales: Backill and VAS. Follow-up examinations were carried out 15 (T/1), 45 (T/2), and 180 (T/3) days from the beginning of treatment. Results: at the end of the therapeutic cycle (T/1) all three methods were efficacious. Instead, at the subsequent follow-ups there was a different trend among laser treatment and the other methods. In fact, the positive effect of laser lasted into T/3 (180 days) while the score of patients treated by NSAIDs and TENS returned to initial values. Conclusions: this trial highlights the superior results of laser therapy compared to those obtained by TENS and NSAIDs in the treatment of low back pain in patients affected by herniated intervertebral disk. The most striking results are represented by the longer duration of the laser effects. Despite its unclear biological effect, the High Power Laser Therapy (HILT) appears to be a interesting new treatment, worthy of further research.*

Key Words: low back pain, intervertebral disk displacement, Nd:YAG laser.

(*) S.R.R.F., Istituti Ortopedici Rizzoli, Via G.C. Pupilli 1, 40134 Bologna. Italia, Tel. +39 51 6366362, e-mail: alessandro.zati@ior.it,

(**) Comitato Tecnico Scientifico, El.En. Group, Via Baldanzese, 17 - 50041 Calenzano (FI)

(***) Dipartimento Cardio Toracico, Via Paradisa, 2 - 56100 Pisa