Dear Editor,

Low back pain (LBP) is one of the common disabling conditions experienced by individuals through the world and the lifetime prevalence of LBP was reported about 84%. A type of LBP which occurs in the absence of an identifiable cause, is called non-specific LBP. Non-specific LBP is managed conservatively by physical therapy and in many cases by applying orthosis. A wide variety of orthotic designs, ranging from lumbosacral corsets to rigid thermoplastic thoraco-lumbosacral orthosis are used for controlling LBP.

During the present prospective study, 25 male patients with chronic non-specific chronic LBP were evaluated after five days trial of a thermoplastic lumbosacral orthosis with a posterior adjustable pad. Inclusion criteria were LBP for 12 months or longer; having a previous history of routine LBP treatments including rest, physical therapy, lumbosacral corset without complete pain relief; non-specific findings in previous para-clinical evaluation. Ethical approval of our research was given by the Ethics Committee of the Tabriz University of Medical Sciences.

The thermoplastic lumbosacral orthosis with a posterior adjustable pad, used in present study, had three parts (Figure 1). This adjustable pad could be moved and located in the desired lordotic positions regarding different tensions on the straps with the advantage include low weight and being comfortable. After adjusting the orthosis, patients were asked to have their usual activities such as walking and going up and down stairs for 30 minutes. Patients who did not have any problem during this 30 minutes, were asked to use the orthosis for the next five days during which they kept their usual daily activity and did not use any type of medication.

The severity of pain was measured using a modified visual analog scale (VAS) scoring method. A VAS is a 10 cm horizontal line ranged from no pain to severe pain. The patient marked the point that he felt representing his perception of current state. Patients’ LBP severity was assessed by using VAS at baseline (VAS-A) and 5 days (VAS-B) after using fitted lumbosacral orthosis. At the times of assessing VAS-A and VAS-B, a single standing lateral radiograph without orthosis was obtained from the lum-
The knee and hip joints. So, preservation of physiologic lumbar lordosis was an important consideration during performing fusion of the lumbar spine. In case of the present orthosis, setting of the lumbar lordosis, characterized for each individual, in a special position may have a pain relief effect on patients with non-specific LBP. Insignificant change of LLA and LSA after using orthosis showed functional effect of orthosis on the spinal column, instead of anatomical changes.

The present study results were affected by some potential limitations, which were only male patients, lack of a control group and short period of follow-up. For confirming, further studies on the large number of patients for a longer period of observation may be needed. Preliminary results of this study showed that using thermoplastic lumbosacral orthosis with adjustable posterior pad may have a pain relieving effect on patients with non-specific LBP and may improve their quality of life.

**Keywords:** Orthosis; Lumbosacral; Thermoplastic; Low back pain

**Conflict of interest:** None declared.

Y Salekzamani1, S Mirzaee1, SK Shakouri1, N Nezami2

1Physical Medicine and Rehabilitation Research Center, 2Drug Applied Research Center, Tabriz University of Medical Sciences, Tabriz, Eastern Azerbaijan, Iran

*Correspondence:* Nirmam Nezami, MD, Physical Medicine and Rehabilitation Research Center, Imam Reza Hospital, Tabriz University of Medical Sciences, Tabriz, Post code: 5165665811, Eastern Azerbaijan, Iran. Tel: +98-411-3363231, Fax: +98-411-3363231, e-mail: dr.nezami@gmail.com

Received: May 20, 2011 Accepted: August 10, 2011

**References**


6 Newcomer k, Iaskowski ER, Yu B, Johnson JC, An KN. The effects of a
