Neurología. 2018;33(4):233—243

SOCIEDAD ESPAÑOLA DE NEUROLOGIA

NEUROLOGÍA

www.elsevier.es/neurologia

ORIGINAL ARTICLE

Effects of physical therapy and relaxation techniques on the parameters of pain in university students with tension-type headache: A randomised controlled clinical trial☆

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Received 27 March 2016; accepted 9 June 2016
Available online 6 April 2018

KEYWORDS
Tension-type headache;
Relaxation techniques;
Autogenic training;
Physical therapy;
Cervical spine kinesiotherapy;
Posture correction

Abstract
Introduction: Non-pharmacological treatments help control tension-type headache (TTH); however, evidence about their effectiveness is still limited. This study evaluates the effectiveness of physical therapy based on cervical spine kinesiotherapy and posture correction exercises compared to a programme of relaxation techniques only (Schultz's Autogenic Training, AT).
Methods: TTH is very common among university students. We randomly selected 152 university students with a diagnosis of TTH according to the criteria of the International Headache Society. Eighty-four were women (55.3%) and 68 were men (44.7%). Mean age was 20.42 ± 2.36 years. The study design is a randomised controlled trial of a non-pharmacological intervention with a blinded evaluation of response variables. We compared the results of two independent samples: AT was used in one of the groups while the other group received AT plus cervical spine kinesiotherapy and posture correction training. Patients recorded any changes in the parameters of pain (frequency, intensity, and duration) and drug consumption in a headache diary before treatment, at 4 weeks, and at 3 months.
Results: Both interventions achieved a decrease in all the parameters of pain; however, decreases in frequency and intensity were more significant in the combined treatment group ($P < 0.01$) ($d = 0.4$).

☆ Please cite this article as: Álvarez-Melcón AC, Valero-Alcaide R, Atín-Arratibel MA, Melcón-Álvarez A, Beneit-Montesinos JV. Efectos de entrenamiento físico específico y técnicas de relajación sobre los parámetros dolorosos de la cefalea tensional en estudiantes universitarios: un ensayo clínico controlado y aleatorizado. Neurología. 2018;33:233—243.

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Conclusions: Such active, non-invasive therapies as AT and cervical spine kinesiotherapy, and especially the combination of both, effectively reduce TTH by preventing and managing the potential psychophysical causes of this disorder. Future research should aim to assess the long-term effects of these interventions.

PALABRAS CLAVE
Cefalea tensional;
Técnicas relajación;
Entrenamiento autógeno;
Terapia física;
Cinesiterapia cervical;
Higiene postural

Efectos de entrenamiento físico específico y técnicas de relajación sobre los parámetros dolorosos de la cefalea tensional en estudiantes universitarios: un ensayo clínico controlado y aleatorizado

Resumen
Introducción: Los tratamientos no farmacológicos consiguen controlar la cefalea tensional, sin embargo, la evidencia es todavía limitada. Esta investigación estudia la eficacia de una intervención fisioterápica, basada en cinesiterapia cervical y pautas de higiene postural, que pretende mejorar los resultados obtenidos únicamente con técnicas de relajación (Entrenamiento Autógeno de Schultz [EA]).
Métodos: Se seleccionó a 152 estudiantes universitarios (sector poblacional entre quienes esta patología es muy frecuente), 84 mujeres (55,3%) y 68 hombres (44,7%), con edad media de 20,42 años (DT = 2,36), diagnosticados de cefalea tensional, según criterios de la International Headache Society. Se diseñó un ensayo clínico, no farmacológico, controlado y aleatorizado, con evaluación ciega de las variables respuesta. Se compararon los resultados de 2 muestras paralelas e independientes, aplicando a una el EA y a la otra la combinación de este con un programa de cinesiterapia cervical y educación postural. Se cuantificaron la mejoría en los parámetros dolorosos (frecuencia, intensidad y duración) y la reducción del consumo de fármacos, en diarios de cefaleas, antes de los tratamientos y después, a las 4 semanas y a los 3 meses.
Resultados: Los 2 grupos de intervención evolucionaron positivamente, consiguiéndose una reducción más significativa en la frecuencia e intensidad de las cefaleas con el tratamiento combinado ($p < 0,01$) ($d = 0,4$).
Conclusiones: Las terapias activas, no invasivas, como el EA y la cinesiterapia cervical, y especialmente la combinación de ambos, consiguen reducir la cefalea tensional, al prevenir y controlar las posibles causas psicofísicas de este trastorno. Como futuras líneas de investigación, sería interesante evaluar el mantenimiento de los beneficios a largo plazo.

Introduction

Headache is a very frequent and disabling condition and one of the leading reasons for outpatient and neurological consultation; it represents a significant healthcare problem worldwide.[1–3]

The most widely used criteria for classifying types of headache are those established by the International Headache Society (IHS), included in the International Classification of Headache Disorders-II (ICHD-II, 2004).[4] At the time of drafting this study, the third edition of this classification (ICHD-III) was in the process of being published and use of its beta version (ICHD-III beta),[5] published in 2013, was already recommended.

Tension-type headache (TTH) is the most frequent type of headache. According to the 2010 systematic review by Stovner and Andree,[6] prevalence of TTH in Europe amounts to 62.2%. Incidence reaches approximately 14.2 per 1000 person-years.[7] TTH affects 70% of the Spanish population.[8] In recent years, TTH has become a significant problem among young people, who are increasingly developing headache.[7,9]

The aetiology and pathophysiology of TTH are currently still being investigated. Among its trigger factors, we should emphasise psychosocial stress and/or muscular overstrain caused by non-physiological posture. Regarding muscular factors, it has been demonstrated that the most consistent symptom is increased pain sensitivity linked to increased head and neck muscle tension. Such authors as Fernández-de-las-Peñas et al.[10,11] or Bendtsen et al.[12,13] have stated that referred pain at active myofascial trigger points in the head and neck cause the release of several algogenic substances which sensitise peripheral nociceptors, originating radiating pain in the head. Some factors promote and stimulate the activity of myofascial trigger points; these include sustained inadequate postures, which may favour dysfunction of the neck muscles, reduce neck mobility, and overload the vertebral segments. Central pain control mechanisms