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Original article

A prospective study predicting the outcome of chronic low back pain and physical therapy: the role of fear-avoidance beliefs and extraspinal pain

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ABSTRACT

Objective: To identify the prognostic factors for conventional physical therapy in patients with chronic low back pain (CLBP).
Methods: Prospective observational study.
Participants: One hundred thirteen patients with CLBP selected at the Spinal Disease Outpatient Clinic.
Main outcome measures: Pain intensity was scored using the Numeric Rating Scale (NRS), and function was measured using the Roland-Morris Disability Questionnaire (RMDQ).
Results: The Fear-Avoidance Beliefs Questionnaire work subscale results (FABQ-work; odds ratio [OR] = 0.27, 95% confidence interval [CI] 0.13–0.56, $p < 0.001$) and extraspinal pain (OR = 0.35, 95% CI 0.17–0.74, $p = 0.006$) were independently associated with a decreased response to conventional physical therapy for CLBP.
Conclusion: We identified high FABQ-work and extraspinal pain scores as key determinants of a worse response to physical therapy among CLBP patients, supporting the need for a special rehabilitation program for this subgroup.

Estudo prospectivo de fatores prognósticos em lombalgia crônica tratados com fisioterapia: papel do medo-evitação e dor extraespinal

Palavras-chave:
Crenças de evitação e medo
Dor extraespinal
Resposta terapêutica
Lombalgia crônica

RESUMO

Objetivo: Identificar os fatores prognósticos para a fisioterapia convencional em pacientes com lombalgia mecânica comum crônica (LMC).
Métodos: Estudo prospectivo observacional.
Participantes: Foram selecionados pelo Ambulatório de Doenças da Coluna Vertebral 113 pacientes com lombalgia mecânica comum crônica.
Medidas de desfecho principais: A intensidade da dor foi pontuada utilizando a Escala Numérica de Dor (END) e a função foi medida usando o Questionário Roland-Morris de Incapacidade (RMDQ).

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Resultados: Os resultados da subescala trabalho do Fear-Avoidance Beliefs Questionnaire (FABQ-trabalho; *odds ratio* [OR] = 0,27, intervalo de confiança de 95% [IC 95%] 0,13–0,56, $p < 0,001$) e da dor extraespinal (OR = 0,35, IC 0,17–0,74, $p = 0,006$) estiveram independentemente associados a uma diminuição na resposta à fisioterapia convencional para a lombalgia crônica.

Conclusão: Foram identificados escores elevados na FABQ-trabalho e dor extraespinal como determinantes-chave para uma pior resposta à fisioterapia em pacientes com LMC o que apoia a necessidade de um programa de reabilitação especial para este subgrupo.

Introduction

Chronic low back pain (CLBP) is one of the most common causes of musculoskeletal system-related disability, and it is associated with high levels of health care resource utilization.[1]

The impact of CLBP in Brazil is thought to parallel the situation in the Northern hemisphere, although accurate data are lacking. The number of Brazilians who are disabled by CLBP is very high; reports estimate that approximately 10 million people in Brazil are affected.[2] CLBP represents the main reason for disability benefit requests and is the third most common cause of disability-related retirement in Brazil.[3]

Treatment for CLBP is usually conservative. Scientific evidence consistently favors pharmacological agents and rehabilitation as the primary treatment options[4,5]; however, the response to physical therapy is rather variable and unpredictable.

Although studies have indicated the efficacy of rehabilitation compared with no treatment, few have demonstrated the superiority of any particular rehabilitation program for CLBP.[6–9] In addition, relapse rates after initial improvement from rehabilitation are high,[7] whereas the long-term cost-effectiveness of physical rehabilitation and its actual impact on recovery in terms of enabling patients to return to their normal activities remains unknown.[8]

Since the Quebec Task Force's report in 1987, many international guidelines have been published.[10–14] Although these guidelines were produced in different countries, most of the issues related to therapeutic intervention were similar.[13] Supervised exercise was generally recommended, although most guidelines did not propose a specific set of exercises. Physical therapists use a broad array of conservative, nonpharmacologic therapeutic interventions, few of which are consistently or widely recommended across various guidelines despite the strong evidence favoring the use of therapeutic exercises for chronic low back pain.

In 2006, the European guidelines for the management of chronic nonspecific low back pain were published. The goal of the COST B13 working group was to provide a set of recommendations that could support existing and future guidelines.[14] One of the major strengths of this guideline is its multinational and multidisciplinary nature. The authors proposed that chronic low back pain should not be considered a single clinical entity and emphasized the need to assess prognostic factors before treatment.

In 2007, the Multinational Musculoskeletal Inception Cohort Study (MMICS) published a list of factors that it deemed necessary to examine in future studies of prognostic indicators for chronicity in patients with CLBP.[9] The need to identify such factors is understandable because although only 5% of CLBP patients develop disabilities, 75% of all expenses related to low back pain are devoted to that population.[1] Consequently, most studies on identifying prognostic factors for chronicity and disability have focused on acute low back pain patients, and very few studies have focused on the prognostic factors for treatment response in patients with established CLBP.

The study hypothesis is that some baseline characteristics may identify subgroup of CLBP patients with distinct response rates to treatment. Therefore, we evaluated CLBP patients' clinical responses to a series of sessions of supervised physical activity and assessed various factors included in the MMICS recommendations to determine their ability to identify the prognostic factors for treatment response to conventional physical therapy.

Methods

Patients

Participants were recruited through advertisements designed by our press office. All potential participants were screened by the same rheumatologist (ASRH) between January and March 2009. Participants who were diagnosed with nonspecific CLBP and met the inclusion and exclusion criteria were recruited. The inclusion criteria were age between 18 and 80 years, pain between the last rib and the gluteal fold that persisted for more than three months, pain that was continuous or present most of the time and was patient's main pain-related complaint, and the provision of informed consent. The exclusion criteria were a diagnosis of systemic inflammatory disease, the presence of characteristic radicular pain, pain originating in the peripheral joints, osteoarticular deformities in the lower limbs, decompensated heart failure, neoplasia in the previous five years, previous lumbar spine surgery, systemic disease that might interfere with the interpretation of results based on medical opinion, an inability to understand questionnaires and explanations or to comply with the treatment, physical therapy for LBP that involved physical exercises in the previous five years, psychiatric disorders, and fibromyalgia or pain not located in the lumbar spine as the main pain-related complaint.

Our Spinal Diseases Outpatient Clinic is part of the Rheumatology Division of the university hospital. Patients are

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