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Efficacy and treatment compliance of a home-based rehabilitation programme for chronic low back pain: A randomized, controlled study

Efficacité de l'autorééducation dans la lombalgie chronique : étude randomisée contrôlée

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Abstract

Objective. – To assess the efficacy and treatment compliance of a home-based rehabilitation programme for chronic low back pain (CLBP).
Population. – CLBP outpatients treated in a Physical Medicine Rehabilitation or Rheumatology unit within a university hospital.
Methods. – We performed a prospective, comparative study. The participants were randomly assigned to either a home-based rehabilitation programme (Gp A) or a standard physical therapy (Gp B). The programme included four weekly sessions. In each group, we measured pain intensity (on a visual analogue scale, VAS), flexibility and muscle endurance (the Schöber MacRae test, finger-to-floor distance, thigh-leg angle, the Shirado and Sorensen test), functional and psychological repercussions (the Quebec functional index and the Hospital Anxiety and Depression scale) and handicap (on a VAS). Follow-up examinations took place at baseline and four weeks and three, six and 12 months later.
Results. – One hundred and seven patients (82 women) with a mean ± standard deviation (S.D.) age of 35.7 ± 0.8 years were included (with 54 patients in Gp A). At four weeks, a significant improvement (relative to baseline) was observed for all parameters in both study groups but with a significantly greater difference in Gp A, which was maintained at one year (despite an observed regression of the improvement at six months). At one year, compliance with the home-based rehabilitation programme was good (68.1%) and 59.5% of the patients regarded the programme as useful.
Conclusion. – Our results suggest that a home-based rehabilitation programme is as effective as standard physical therapy. However, this type of programme requires patient motivation and regular follow-up.

Keywords: Low back pain; Rehabilitation; Exercises; Home-based exercises; Compliance

Résumé

Objectif. – Évaluer l'efficacité et l'observance à un programme supervisé d'exercices d'autorééducation dans la lombalgie chronique.
Population. – Le recrutement est effectué à partir de lombalgiques chroniques suivis en consultation dans le service de médecine physique et de réadaptation et/ou de rhumatologie.
Méthodes. – Il s'agit d'une étude prospective, randomisée, comparative, entre un groupe de sujets ayant suivi un programme supervisé d'autorééducation (Gp A) et un groupe traité par rééducation « classique » (Gp B). Les critères d'évaluation étaient l'intensité de la douleur lombaire (échelle visuelle analogique), la mobilité rachidienne (indice de Schober Mac Rae), l'extensibilité et l'endurance musculaire (distance doigt sol, angle jambe cuisse, test de Sorensen et de Shirado), l'état fonctionnel (échelle de Québec), l'état psychologique (Hospital Anxiety and Depression scale) et l'handicap ressenti (échelle visuelle analogique). L'observance a été évaluée par le nombre des séances réalisées. Tous les paramètres étaient évalués à j0, quatre semaines (fin de traitement), trois et six mois et un an.
Résultats. – Cent sept patients, 82 femmes et 25 hommes d'âge moyen de 35,7 ± 0,8 ans ont été inclus dans l'étude dont 54 patients dans le Gp A. À quatre semaines, une amélioration significative de l'ensemble des paramètres a été observée pour les deux groupes mais avec une différence

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significative en faveur du Gp A. Cette amélioration s'est maintenue à un an pour Gp A malgré un fléchissement du gain observé à six mois. À un an, l'observance au programme d'autorééducation était bonne (68,1 %) et 59,5 % des patients ont considéré ce programme comme utile.
Conclusion. – Les résultats de cette étude suggèrent qu'un programme d'autorééducation supervisé est aussi efficace qu'une rééducation classique. Cependant, ce type de programme nécessite une motivation suffisante et un suivi régulier.

Mots clés : Lombalgies ; Rééducation ; Exercices ; Autorééducation ; Observance

1. English version

1.1. Introduction

Low back pain (LBP) is a public health problem worldwide because of its socioeconomic and psychological impact and the limitations of the many preventive or curative treatments that have been proposed [1,5,17,31,35]. In fact, LBP affects up to 50 to 80% of all adults at some point in their life [9,10,17]. In Tunisia, the annual prevalence is 50.1% and the incidence is 57% [4]. However, only 6 to 8% of patients progress to chronic disability and will be responsible for more than 70% of direct and indirect medical costs or pose difficulties for care provision procedures [10,26]. Many differed drug and non drug treatments are used to treat LBP. In contrast to ''conventional'' programme rehabilitations based on analgesia, improvements in trunk flexibility, muscle strengthening and improved functional capacity, dynamic programmes (in which the subject is active) are now being proposed. These programmes (such as a ''Back School'') include the performance of physical exercise, functional restoration and multidisciplinary interventions [6,17,29,33,35,40]. The efficacy (in terms of pain relief and functional restoration) of therapeutic approaches based on active exercise has been demonstrated in several studies [7,8,20,25,35,36,41,43]. A recent literature review concluded that physical exercise can help chronic low back pain (CLBP) sufferers to resume normal activities and return to work [16]. Accordingly, functional restoration programmes have been developed; the philosophy is to restore the patient's physical, psychosocial and socioeconomic status via a proactive approach.

These programmes can significantly improve a patient's quality of life and social reintegration [34,40,42]. However, functional restoration programmes are burdensome and costly; there is thus an incentive to choose simple, effective, and inexpensive treatment protocols but the latter must be dynamic and active involve the patient.

The purpose of the present study was to assess the efficacy and treatment compliance of a home-based rehabilitation programme for CLBP.

1.2. Patients and methods

1.2.1. Population

The study population comprised all CLBP patients referred to the Physical Medicine and Rehabilitation Department at Monastir Hospital (Tunisia) between January 2006 and December 2007. All patients gave their informed consent to participation in the study.

Patients were excluded from the study if they were under 20 or over 60 years or had a history of symptomatic LBP (trauma, infection, tumours, inflammatory), sciatica and psychiatric disorders and/or behaviour precluding participation in group therapy.

1.2.2. Study protocol

1.2.2.1. Procedure. We performed a randomized, prospective clinical trial with two parallel groups:

- group A (Gp A) performed a home-based rehabilitation programme;
- group B (Gp B) received a standard rehabilitation programme.

1.2.2.2. Programme content

1.2.2.2.1. Home-based rehabilitation programme. Patients were assigned to groups of five or six subjects and received four practical training sessions of supervised, rehabilitation exercises. The weekly, 2-hour sessions were led by the same physiotherapist (AH) in the Physical Medicine and Rehabilitation Department's outpatient service. Initially, the programme included 18 exercises: four self-positioning exercises for pain management (two in extension and two in flexion), eight muscle stretching exercises (lumbar spine, quadriceps, psoas and hip adductors) and four other muscle strengthening exercises (abdominal and trunk muscles). The exercises were learnt during the first three sessions (i.e. 6 per session).

We asked patients to perform these exercises daily at home. By way of a reminder, a booklet given to each patient featured illustrations of each exercise. The fourth session included a review of the previous lessons and the establishment of the final home-based programme, which contained nine exercises for each patient (to be performed for 30 minutes a day for a month).

1.2.2.2.2. The standard rehabilitation programme. The standard rehabilitation programme lasted four weeks and involved 90 minutes of treatment a day, three times a week. The programme included analgesic electrotherapy, flexibility training, pain management, stretching and proprioception exercises and muscle strengthening exercises. All patients received an individual session by the same physiotherapist (BS).