

A REHABILITATION APPROACH TO CHRONIC LOW BACK PAIN DISABILITY

PRISTOP PRI ZMANJŠANI ZMOŽNOSTI ZARADI KRONIČNE BOLEČINE

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Summary

When low back pain (LBP) permanently interferes with daily activities or employment, patients experience chronic low back pain disability (CLBPD). This is a syndrome that in addition to chronic pain includes depression, anxiety, and difficulties in domestic and social life, in the performance of daily tasks, and in integration at work.

In contrast to other types of treatment tried for chronic LBP, the rehabilitation approach to CLBPD considers primarily the disability. According to the principles of this approach, the various components of the CLBPD syndrome are treated in parallel by a multidisciplinary team, and the rehabilitation process includes task performance assessment, pain reduction, cognitive, behavioral, social and ergonomic interventions, and exposure to functional and physical training of gradually increasing difficulty, irrespective of pain perception.

Outcomes of functional restoration programs for CLBPD vary. The program at Loewenstein Rehabilitation Hospital is offered to inpatients with a high level of disability and reduced performance on primary ADL tasks. Rehabilitation is carried out in an environment that encourages functioning and denies secondary gain. The Spinal Pain Independence Measure (SPIM) and its modified version (SPIM – Mod) are used for quantitative functional assessment. The program was found effective, especially for CLBPD patients with more severe functional deficit.

Key words:

chronic low back pain, functional restoration program, rehabilitation, disability, Spinal Pain Independence Measure

Povzetek

Ko bolečina v križu trajno moti vsakodnevne dejavnosti ali zaposlitev, imajo pacienti zmanjšane zmožnosti zaradi kronične bolečine v križu (ZZZKBVK). To je sindrom, ki poleg kronične bolečine vključuje depresijo, tesnobo, težave doma, v družabnem življenju, pri izvajanju vsakodnevnih opravil in pri vključevanju na delovno mesto. Za razliko od drugih oblik zdravljenja kronične bolečine v križu se rehabilitacijski pristop k ZZZKBVK najprej posveča zmanjšanim zmožnostim. V skladu z načeli rehabilitacijskega pristopa se različne sestavine sindroma ZZZKBVK zdravi vzporedno v multidisciplinarnem timu, rehabilitacijski proces pa vključuje ocenjevanje izvajanja nalog, zmanjšanje bolečine, kognitivne, vedenjske, socialne in ergonomске posege ter funkcijsko in telesno vadbo postopno naraščajoče težavnosti ne glede na zaznano bolečino.

Izidi programov funkcijske obnove pri ZZZKBVK so različni. Program v rehabilitacijski bolnišnici Loewenstein je na voljo pacientom z močno zmanjšanimi zmožnostmi in močno poslabšanim izvajanjem osnovnih vsakodnevnih opravil. Rehabilitacijo izvajamo v okolju, ki spodbuja izboljšanje funkcioniranja in onemogoča sekundarne koristi. Za kvantitativno funkcijsko ocenjevanje uporabljamo Lestvico neodvisnosti pri bolečini v hrbtenici (SPIM) in njeno spremenjeno obliko (SPIM – Mod). Program se je pokazal kot učinkovit zlasti za paciente z ZZZKBVK z resnim funkcijskim primanjkljajem.

Ključne besede:

kronična bolečina v križu, program funkcijske obnove, rehabilitacija, zmanjšane zmožnosti, Lestvica neodvisnosti pri bolečini v hrbtenici

INTRODUCTION

Low back pain (LBP) is a severe medical, economic, and social problem worldwide (1,2). In the majority of patients

with LBP the etiology is unknown and the pain is considered to be non-specific (3). LBP may be considered non-specific even if an etiology is identified but is unlikely to be the cause of pain because of its high occurrence among people without LBP (4).

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LBP is considered chronic (CLBP) when it lasts longer than three months. When it permanently interferes with daily activities or employment, patients experience chronic low back pain disability (CLBPD) (1,2).

Because there is no optimal treatment for CLBP, many types of treatment have been tried. These include confinement to bed and rest aimed at preventing mechanical causes of pain, oral pain-killing and anti-inflammatory medication, acupuncture, various physical therapies, psychological and educational interventions, alternative medicine measures, non-surgical invasive measures such as spinal and other injections, surgical interventions, and combinations of some of these (2,3,5-9). There is no consensus in the medical literature regarding the efficacy of these treatments for CLBP. Some of them carry risks that may be small but have potentially devastating results. None of the above-mentioned treatments addresses directly the functional deficit, which is an important characteristic of CLBPD (10).

CHARACTERISTICS OF CLBPD

CLBPD is a syndrome that combines physiological changes of spine and surrounding tissues with social, psychological, and behavioral factors that may lead to further degenerative spinal changes and have a negative effect on the quality of life (2,11,12). The CLBPD syndrome includes chronic pain, depression, anxiety, as well as difficulties in domestic and social life, in performing daily tasks, and in integration at work. The various components of the syndrome, whether caused by pain or by other factors, become independent over time, and each one affects negatively the other components and the quality of life. Pain is initially a symptom representing an anatomic-pathologic impairment. The pain becomes a part of a disease whose main feature is the functional deficit. The disease affects the patients, their relatives and friends, and the entire society. It creates a vicious cycle in which pain, mental and functional difficulties, disruption of domestic and social relationships, and damage to social and vocational status reinforce each other.

CLBPD is a frequent cause of disability in young persons. In addition to its medical consequences, it significantly increases direct and indirect health costs. Less than half of those who left their employment will return to it, and the chance of returning to work after more than two years is very small (2).

The functional deficits that characterize CLBPD may be expressed in primary and secondary activities of daily living (ADL). The primary ADL deficits are manifest in the more severe cases, and appear as difficulty or inability to take care of the lower body (dressing underwear or pants, putting on shoes, lacing), reduction of sitting time (for everyday activities one should be able to sit for at least 30 minutes continuously, and to enjoy a show or a movie, at least 90

minutes), reduction of walking distance, and reduction in the quality of walking. The secondary ADL deficits may appear as reduction of activity while standing (e.g., washing dishes), difficulty in bending (e.g., for the purposes of cleaning), and limitations in work capacity (2,11).

REHABILITATION FOR CLBPD

In contrast to other approaches to CLBPD, which consider primarily the physical or psychological impairment and focus on rest, surgery, psychological intervention, or on treating the pain, the rehabilitation approach to CLBPD adopted at Loewenstein Rehabilitation Hospital considers primarily the disability. The basic assumption of this approach is that, although patients complain mainly of pain and pain is the presenting symptom, it is not the main problem. The functional deficit may have more severe consequences such as damage to self-esteem and to family, social, and economical status. Eliminating the pain does not remove these consequences, whereas improving the other components of the CLBPD syndrome may also improve pain perception. Addressing function mainly makes possible a more objective outcome assessment, because in contrast to pain assessment, which is based on subjective reports, assessment of function can be based on objective observation (2,8,9,13,14).

The principles of the rehabilitation approach presented here are as follows: (a) the main objective of the treatment is to improve function, and reducing pain is secondary; (b) the various components of the CLBPD syndrome are treated in parallel by a multidisciplinary team; (c) quantitative assessment of task performance is conducted before and after rehabilitation in order to adapt the treatment to the patient's deficits, and optimize and monitor functional achievements; (d) pharmacological and physical pain-reducing agents are used during rehabilitation, with their effect frequently monitored and their administration adapted for optimal response; (e) the treatment includes cognitive and behavioral psychological interventions administered by psychologists and by other team members; (f) the treatment includes counseling for domestic and social problems, and interventions at workplace, when relevant; (g) the treatment includes exposure to functional challenges of gradually increasing difficulty; (h) the treatment includes physical training of gradually increasing difficulty for muscle strengthening, endurance, range of motion, and fitness; (i) progress in functional missions is guided "by contract," irrespective of pain perception; and (j) in some cases the treatment includes ergonomic interventions.

The rehabilitation approach to CLBPD began with the program developed by Mayer and colleagues in 1985 (15). The authors found an 80% rate of return to work 1-2 years after rehabilitation. Follow-up revealed that with rehabilitation the return to work rate was twice as high as without rehabilitation. In the second year after rehabilitation, patients

required half the surgical spinal interventions and 20% of visits to medical specialists compared to those required by control patients who did not participate in that rehabilitation program. The functional restoration approach has been adopted in many countries, but applied in different ways. Each program emphasized different components of the original one.

The outcomes of these programs vary. The variability was attributed to a range of factors, including missing components of the original program (2,13), differences in welfare policy between countries (2), and differences in attitude toward work between patient groups (14). It seems, however, that the main reason for the variability in outcomes of the functional restoration programs is the heterogeneity in the degree of disability of the participants in the various programs.

Most of the published functional rehabilitation programs were ambulatory, and their main outcome measure was return to work. Härkäpää (16) described an inpatient functional restoration program conducted in Finland. Participants in the program achieved better improvement in pain relief and in sick leave days than did patients in ambulatory rehabilitation. The better outcomes in inpatient rehabilitation were attributed to the intensity of care, but in other CLBPD rehabilitation programs outcomes did not correlate with the intensity of care (13). The advantage of inpatient rehabilitation may be related also to the environmental change. After being admitted to a rehabilitation ward, the patient transfers from an environment with a secondary gain for disability to one that encourages functioning and denies the secondary gain.

THE LOEWENSTEIN HOSPITAL EXPERIENCE

The principles of the functional restoration programs have been adopted at Loewenstein Hospital in the mid-1990s. The functional restoration program for CLBPD at Loewenstein Hospital is offered to inpatients with a high level of disability and reduced performance of daily tasks. It is assumed that whereas the natural environment supports dysfunction, hospitalization for rehabilitation encourages functioning because caregivers expect functional achievements throughout the day, not only at therapy sessions (2).

For quantitative functional assessment of CLBP patients with primary ADL dysfunction, a team from Loewenstein Hospital developed the Spinal Pain Independence Measure (SPIM) (5). SPIM includes tasks for mobility, carrying loads, duration of sitting and standing, and lower body self-care (e.g., dressing the lower body). The original scoring ranged between 0-100, but assessing some of the items was found to be impractical and these items were removed from the scale. The modified version of SPIM (SPIM – Mod) is scored on scale of 0-82 (17).

In 2001, Itzkovich et al. (5) showed 43% improvement in the mean SPIM score of patients with significant primary ADL deficits (initial mean score of 32.4). In a recent study (17), in a mixed population of CLBPD patients with primary ADL deficits of intermediate severity (initial mean score of 49), improvement in daily task performance was noted in 72% of CLBPD patients, and pain improved to some degree in 60% of patients. SPIM scores improved during rehabilitation by up to 41 points (84%), and the mean SPIM score increased by 18%.

CONCLUSION

CLBPD appears in only a small portion of patients with LBP, but most of the burden related to LBP can be attributed to this population. The etiology of the LBP in these patients is frequently unknown, and most of the various approaches to care do not directly address disability, which is the main problem. The rehabilitation approach to CLBPD adopted at Loewenstein Rehabilitation Hospital focuses primarily on reducing dysfunction. The program, designed for inpatients with significant primary ADL deficits, treats the various components of the CLBPD syndrome in parallel with the help of a multidisciplinary team. Pharmacological and physical pain-reducing agents are used and frequently monitored for optimal response, and the environment in the rehabilitation ward encourages functioning and denies secondary gain. The functional restoration program of Loewenstein Rehabilitation Hospital was found to be effective for recovering daily task performance, especially for CLBPD patients who arrived with more severe functional deficit.

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