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A STUDY TO EXPLORE PREFERRED METHOD OF TREATMENT AMONG PHYSIOTHERAPISTS FOR MECHANICAL LOW BACK PAIN

[1]Iram Iqbal Shamsi
[2]Sadaf Subhi
[3]Faisal Yamin
[4]Atiq Ur Rehman
[5]Fazli Azim
[6]Rajesh Kumar
[*7]Shireen khanzada

ABSTRACT

Background: Conservative treatment remains the standard of care for treating nonspecific mechanical low back pain which is very common problem all around the world. In Pakistan, physiotherapists encounter this problem frequently in clinical practice. Despite a wide variety of treatments, 100 percent results have been unachievable. The purpose of this study was to establish a Standard and Uniform Physiotherapy Protocol for mechanical low back pain.

Methods: To achieve the objective of this study, a questionnaire with structured and open ended questions were designed and distributed to hospitals and private clinics. 139 questionnaires were distributed from 1st March 2009 to 30th May 2009. By the end of July 5, 2009, 101 were filled and returned. The data was analyzed using descriptive statistics.

Results: Results have shown that McKenzie (25%), combination of McKenzie and Maitland (9%) were among the preferred techniques. However, 14% did not use a specific technique. The preferred physical agents were hot packs (22%), combination of hot packs, ultrasound, TENS (22%). However, 4% did not prefer any physical agent. Out of 101 subjects per week, 20 subjects were treated for 7 days, 11 were treated for 5 days, 53 were treated for 3 days, 6 were treated for 2 days and 11 were treated for 1 day. The recurrence rate was 32.14% for those who were treated for six days, 34.75% for those treated for 5 days, 33.55% for those who were treated for 3 days, 31.25% for those who were treated for 2 days, and 37.55% for those who were treated for one day. 39% did not consider ergonomical issues while 27% did not advice regarding the patient nutritional facts. Average depression among patients was 24.7%.

Conclusion: This study shows that the results for mechanical low back pain were not as effective with combination of techniques and modalities. If the physiotherapists had taken the psychological factors, ergonomical approach and nutrition into consideration, the results would have improved to a significant level.

Keywords: methods of treatment, physiotherapy, mechanical low back pain.

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[1]Senior Lecturer, Institute of Physical Medicine & Rehabilitation, Dow University of Health Sciences, Karachi, Pakistan.
[2]Physiotherapist in holy family hospital, Pakistan
[3]Assistant Professor, Institute of Physical Medicine & Rehabilitation, Dow University of Health Sciences, Karachi, Pakistan
[4]Assistant Professor, Institute of Physical Medicine & Rehabilitation, Dow University of Health Sciences, Karachi, Pakistan
[5]Senior lecturer, Institute of Physical Medicine & Rehabilitation, Dow University of Health Sciences, Karachi, Pakistan
[6]Senior lecturer, Institute of Physical Medicine & Rehabilitation, Dow University of Health Sciences, Karachi, Pakistan.

CORRESPONDING AUTHOR

[*7]**Shireen khanzada**

Physiotherapist,
Institute of Physical Medicine & Rehabilitation, Dow University of Health Sciences, Karachi, Pakistan

INTRODUCTION

Low back pain is one of the leading reasons for physician visits [1] and is the most common reason for use of complementary and alternative medicine in the United States [2]. The symptoms are frequently accompanied by depression, anxiety and psychological distress [3] which are the principal reasons for use of both conventional and complementary healthcare.

Acute mechanical low back pain with an onset of less than 4 to 6 weeks is a common problem. The source of the pain may be in the spinal joints, intervertebral disc, vertebrae, or soft tissues. Acute mechanical low back pain is also referred to as lumbago, idiopathic low back pain, lumbosacral strain or sprain, or lumbar syndrome. Some studies failed to find any relationship between demographic, anthropometric or clinical characteristics and the presence of directional movement [4]. The specific source of pain remains debatable as only 20% is diagnosed in the early stages. "Mechanical" low back pain implies that the source of the pain is in the spine and/or in its supporting structures. The surrounding muscles and ligaments may become inflamed and irritated. Less than 1% of patients who develop acute low back pain have a serious cause, such as cancer or infection, to explain their pain.

Mechanical low back pain (LBP) affects at least 80% of the population. It is usually recurrent and subsequent episodes tend to increase in severity. It is common in individuals who lead sedentary lives and in those who engage in manual labor. It can occur at any age but is most prevalent during the third to sixth decade of life.

Tremendous costs are associated with LBP including lost productivity and income from work, the expense of medical, rehabilitation and surgical interventions, and the costs of disabling pain and limited daily function. The stated cause of work loss is upper respiratory conditions followed by mechanical low back pain. The costs for treatment and compensation for LBP in industry may be greater than the total amount spent on all other industrial injuries. However, most of the costs, perhaps 80%, are incurred by about 20% of the LBP patients who then become disabled.

In USA, low back pain costs around $15 billion per year for medical care and disability payments [1]. Mechanical low back pain is one of the most common complaints expressed by emergency physicians in the United States and accounts for more than 6 million cases annually. As a health problem, low back pain is the 3rd most expensive disorder, after heart disease and cancer. Exercises can be an effective approach for reducing pain, but should be done under supervision of a licensed health professional. Generally, some form of consistent stretching and exercise is believed to be an essential component of most back treatment programs. However, one study found that exercise is also effective for chronic back pain, but not for acute pain. Another study found that back-mobilizing exercises in acute settings are less effective than continuation of ordinary activities as tolerated. Some beneficial effects were found in high intensity group (7% Average) but do not clearly support the claimed effects [5]. Rehabilitative exercise consists of high repetition and low load exercises to increase endurance, strength and balance [6].

Physical therapy consists of manipulation and exercise, including stretching and strengthening (with specific focus on the muscles which support the spine), often performed under the guidance of a physical therapist. Physical therapy may be especially effective when part of a 'work hardening' program, or 'back school". A British Medical Journal trial found that the Alexander technique was shown to have long term benefits for patients with chronic back pain[7]. A subsequent review concluded that 'a series of six sessions of Alexander technique combined with an exercise prescription was effective for the treatment of back pain in primary care. The Alexander Technique was viewed as an effective technique by most patients [8].

Manipulation is provided by an appropriately trained and qualified chiropractor, osteopath, physical therapist, or a physiatrist. Studies of the effect of manipulation suggest that this approach has a benefit similar to other therapies and superior to placebo [9]. Acupuncture has some proven benefit for back pain however, a recent randomized controlled trial suggested insignificant difference between real and sham acupuncture [10].

Education and attitude adjustment to focus on psychological or emotional causes, respondent-cognitive therapy and progressive relaxation therapy can reduce chronic pain.

LBP is treated with various equipment and techniques including prolonged bed rest, narcotics, surgery, heat, cold, exercise, immobilization, flexion, extension, traction, massage, manipulation, mobilization, muscle relaxants, etc. LBP is a self-limiting disease which means that most patients recover regardless of treatment with time; 80-90% of patients with acute LBP recover in about six weeks, and nearly 60% of LBP patients return to work within one week. Since LBP is usually self-limiting and recurrent in about 90% of the population, prevention and self-treatment techniques might prove beneficial.

In many cases, active physical therapy is an essential part of acute back pain rehabilitation. Massage, ultrasound, diathermy, cryotherapy, exercises, traction, postural correction techniques may also be recommended. Many patients may also benefit from chiropractic manipulation or specialized methods like McKenzie, Maitland or trigger point release etc.

For low back pain, physiotherapists choose a variety of available methods in accordance with their experience. This study focused on the preferred method of treatment among physiotherapists of Pakistan for mechanical low back pain.

METHODOLOGY

Through convenient sampling, a physical therapist who are working in the field with at least One year of experience and working in renowned hospitals like Aga Khan University hospital, Liaquat National hospital, Alamgir International trust, Dow university of Health Sciences and Zia Uddin Hospital were selected for the study. Those who have diplomas in physiotherapy or three years bachelor without additional one year , Quacks or those qualified therapist

who were freshly graduated or not having at least one year of current working experience were excluded.

139 questionnaires were distributed from March 2009 to 30th May 2009. By the end of July 5, 2009, 101 were filled and returned. 38 participants failed to submit their forms by the end of 5th July 2009. Targeted subjects were a total of 101 qualified physiotherapists with 54 males and 47 females, average age of 25.25 years and with at least 1 year of current working experience.

The Questionnaire was semi structured with open and closed ended questions were distributed. Upon return of questionnaires all preferred methods i.e. special techniques, number of treatments, goal achieved time , satisfaction level of patients , recurrence rate , percentage of depression in patients , home exercise program, ergonomical advices and nutritional advices were tabulated . Along with this, the most preferred modality and technique and their combination of recurrence rate and depression was calculated using simple statistics.

RESULTS

Most commonly used special technique is McKenzie's protocol which is (25%) Most Preferred combination of techniques was McKenzie and Maitland (9%), on the contrary 14% did not use any specialized technique. Most preferred physical agent was hot pack (68%) and a combination of physical agents was hot pack, ultra sound and TENS (22%) and 4% do not prefer any Modality as they totally relied on Hand on Techniques. In regard to the number of treatments per week out of 101 therapists, 20 preferred six days per week, 11 preferred five days a week, and 53 preferred thrice a week, 6 preferred twice a week and 11 preferred once a week.

Recurrence rate for those who treated their patients for whole week was 32.14% for those who treated their clients five days a week recurrence rate was 34.75% as for those who treated thrice a week it was 33.55% and it was minimal(31.25%) for those who preferred treat their clients for twice a week. In most preferred combination of modalities i.e. ultrasound , TENS and Hot packs has a recurrence of 27.08% as compared to those who did not prefer any physical agents where recurrence rate was 37.50% And finally recurrence of mechanical back pain was highest (37.15%) in those who preferred to treat their patients only once a week. The average recurrence was 35%. There was only 4% therapist who claimed to have 0% recurrence.

Therapist reported depression as a common factor. 46 therapists reported that depression in their back pain clients was 50%, 33 reported that depression was 25%, 17 reported 75%, 3 reported 100% and 2 reported 0%. Depression was common in low back pain patients with an average of 24.7%. 39% therapists did not advice about Ergonomics and 27% therapists did not give any advice regarding nutrition.

DISCUSSION

The motivation behind this study is to explore the best treatment approach for non specific mechanical back pain which is very common and no such study has been done to find out the best possible single or combination of treatment in Pakistan.

The results of this study show that a Holistic (multi disciplinary) approach is required to treat mechanical back pain and most importantly to avoid its recurrence. Most preferred physical agent was hot pack (68%), most commonly used special technique is McKenzie's protocol which is (25%), combination of McKenzie and Maitland (9%), 14% do not use any specialized techniques like Alexander technique[11] and 4% do not use any physical agents or their combinations. 14% who do not use any special technique may be due to lack of knowledge or practice of that technique. Hot pack may be chosen because it is easy to apply and have fewer side effects or dangers. Laser was not preferred by any of the therapist may be due to its unavailability in the departments. Majority of therapists are using different combination of therapies but still recurrence rate is 35% which is not encouraging [11,12].

It was shocking that 39% therapist did not give any advice regarding postural adjustments (ergonomics) which might be the biggest hindrance achieving better results. Another important factor which is missed by 27% therapists was advice about dietary supplements like that of calcium and vitamin D. Low back pain may arise from deficiency of above mentioned vitamin and minerals. Depression, anxiety and stress come with acute or chronic pain. Researchers estimate that accompanying depression and anxiety occur in 20% to 50% of patients with chronic pain. If patient experiences chronic pain, their emotions and moods may be strongly influenced by the underlying physiology associated with the condition [13].

It was gratifying to note that none of the therapists included psychological approach in their treatment protocol, as we know that anxiety and socioeconomic factors can play a deteriorating effect on chronic pain. Long term pain may be memorized in brain and even if patient recovers 100%, he may continue to experience pain. No recreational activities were advised by any of the therapist which should be a fundamental part of the treatment regardless of age and socioeconomic factors.

As we noticed in results that recurrence is higher in those who did not use any modality (37.50%), treats their patients once a week (37.55%) and those who do not adopt to any specialized technique (34.09%), on the contrary better results were found in those who treated their clients with specialized techniques (McKenzie) and uses a combination of hot pack and TENS recurrence is (27.08%) and treats their patients twice a week, recurrence is (31.25%). Sometimes recurrence may reach to 50% [14]. It might suggest that if mechanical back pain is treated with specialized techniques, a combination of hot pack and TENS, treated twice a week for six weeks gave the best results but unfortunately still not 100%.

This might get better if only therapist begin to understand value of ergonomics, diet, psychological approach and implementation of recreational activities. Another very important aspect is patient education and awareness to the importance of physical treatment so they may follow the

instructions or home program. There is a large variation in psychological status among patients with back ache and additional research focusing psychosocial factor is necessary [15].

Most importantly 4% therapist claimed their patients have 0% recurrence, 2% were treating their clients with McKenzie Maitland, myofascial release and trigger point therapy and in alternate days. 1% with McKenzie and 1% with Maitland. With hot packs, TENS, Ultrasound and Short wave diathermy were common modalities. Experimental studies should be conducted individually for these protocols for definite answer.

CONCLUSION

This study shows that the results for mechanical low back pain were not as effective with combination of techniques and modalities. If the physiotherapists had taken the psychological factors, ergonomical approach and nutrition into consideration, the results would have improved to a significant level.

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