

Review on Chronic Low Back Pain Management Approach in Primary Care

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Abstract

Low back pain is a very common health issue treated in primary care and carries varying definitions. The European Guidelines for Prevention of Low Back Pain characterizes it as “pain and discomfort, localized below the costal margin and above the inferior gluteal folds, with or without leg pain (sciatica)”, whereas S. Kinkade defines it as “pain that occurs posteriorly in the region between the lower rib margin and the proximal thighs”. Non-specific low back pain, meaning back pain that is “not attributed to any recognizable, known specific pathology”, involves symptoms such as disability and pain. The considerable variation that exists in diagnostics and management of this issue around the world shows a net difference between different countries, whether it be by healthcare professionals, specialists, or general practitioners. The Medline, Pubmed, Embase, NCBI, and Cochrane databases were searched for studies of patients with CKD. Incidence, etiology, and management options were analyzed. Low back pain tends to increase in patients age 30 and above, and those numbers tend to rise steadily until age 65. No treatment has been developed that would eradicate it, thus rendering it one of the main reasons for patient visits to their physician. Opioids tend to be prescribed for pain management, alongside NSAIDs, both of which tend to have overwhelming negative side effects in the long term.

Keywords: Chronic low back pain, Low back pain, Radiculopathy, Referred low back pain

INTRODUCTION

Many studies have examined the impact of low back pain (LBP) on people. Indeed, it has been determined by the National Health and Nutrition Examination Survey II that people between the ages of 25 and 74 are more susceptible (16%) to back pain that lasts for longer than two weeks [1]. 84% of these individuals schedule a visit to their healthcare provider whereas 31% tend to be hospitalized, and 12% are candidates for surgery [2].

The common cold and back pain are both the most common ailments cited as reasons for an appointment at the doctor [3]. Headache and back pain are the main and most common pain disorders that cause loss of productivity and time [4]. Most of those individuals who suffer from LBP do not need medical intervention and will recover on their own. Indeed, a Swedish study of patients with acute LBP determined that recovery within the week occurred in 57% of patients. According to this study, 90% of patients recovered in 6 weeks and 95% had recovered in 12 weeks. Barely 1% of patients had had to remain out of work (on disability) one year later [5]. This is a likely justification for treatments to be principally aimed at preventing the progression to chronic pain and reducing the

time for recovery as much as possible, as the highest costs tend to be incurred when the duration of LBP lasts longer than 12 weeks.

RESULTS AND DISCUSSION

Several categories have been erected in which patients are placed according to the results of the physical examination by the physician and the history given by the patient:

- Nonspecific low back pain;

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- Back pain related to spinal stenosis or radiculopathy;
- Nonspinal back pain;
- Back pain is related to another spinal cause.

MRIs and CTs are useful in diagnosing and managing patients whose back pain is related to spinal stenosis, radiculopathy, or another particular spinal cause. On average, a physician will see one patient per week presenting with low back pain [6]. When the pain is fluctuating or persistent and lasts longer than 12 weeks or three months, the patient is considered as having chronic low back pain. Such patients are more likely to consult their GP for their pain (65%) as opposed to orthopedists (56%), physical therapists (50%), and chiropractors (47%) [6].

There are many different symptoms related to low back pain, ranging from mild and unpleasant to severe and incapacitating. Low back pain can be sudden but it can also start small and get gradually worse with time [7].

There is an array of different and independent symptoms, such as:

- Dull and/or achy pain in the lower back
- Stinging, burning pain from the low back to the back of the thigh, sometimes into the lower legs or feet, along with including tingling and/or numbness (sciatica)
- Tightness and muscle spasms in the hips, pelvis, and lower back
- Pain that gets worse from prolonged standing or sitting
- Difficulty going from standing to sitting, walking, or standing up straight

Symptoms can also be categorized by duration and type of onset:

Acute Pain. Acute pain is sudden onset and may remain from days to weeks, as a bodily response to tissue damage or injury. As the body heals, the pain progressively lessens [7].

Subacute Low Back Pain. Subacute low back pain is mechanical stress (such as joint pain and muscle strain) that has been prolonged. It may last up to three months and for a minimum of 6 weeks. If the patient shows signs of subacute low back pain it is recommended that they be administered a medical workup, especially if the pain is severe enough to create limitations in their ability to perform daily living tasks as well as working and sleeping.

Chronic Back Pain. Chronic back pain is characterized as severe, generally is unresponsive to treatment, and lasts longer than three months. A thorough medical workup is necessary in this case for the exact origin of the pain to be ascertained [7].

Diagnosis

Low back pain requires a physical evaluation, whether it be brief or extensive, to come up with a management strategy [8]. Relevant data can be gathered during a general physical exam; this data includes appearance, ambulation status (mobility, gait, and assistive devices), vital signs, signs of

distress, skin, behavior, thought process, judgment, and affect and mood [9].

It is also necessary to conduct a neurological exam. This consists of a test of motor strength in the upper motor neuron reflexes, lower extremities and back, deep tendon reflex testing, and sensation [9]. The clinician must use this data to rule out as many causes of specific low back pain as possible such as nerve root, spinal cord, and peripheral nerve pathology. The physical evaluation must include a range of motion movement tests, palpation of the spinous process, an inspection of the thoracolumbar spine, and tests for specific disorders. The thoracolumbar spine inspection will inform the physician of the patient's alignment and posture [10]. Equally, the required palpation of the spinous processes will help uncover possible localized tenderness, which could likely indicate vertebral compression fractures, epidural tumor, or abscess [10]. Additionally, more information relating to the type of lower back pain can be gleaned from a range of motion limitations/movements [6]. It will also be necessary to uncover any involvement of the lumbar hamstring muscle or nerve roots by performing a straight leg raise test [10].

However, low back pain treatment rarely requires diagnostic testing [11] and this issue only rarely involves laboratory studies; however, along with plain radiographs, tests with ERS and/or CRP will be necessary when there is a suspicion of malignancy or infection to ascertain whether or not it will be necessary to use advanced imaging [11]. Nonetheless, to localize the lesion, determine whether the patient has chronic or acute radiculopathy, and determine whether the source of patient symptoms are caused by the radiologic abnormalities observed, electrodiagnostic testing (electromyography (EMG) and nerve conduction velocity (NCV) testing) can be of great support [11].

Imaging studies constitute either advanced imaging or X-rays. After deciding on the obtention of imaging, it is recommended that the clinician commences with weight-bearing radiographs of the lumbar spine (lateral and AP) [12]. Magnetic resonance imaging (MRI), computed tomography (CT), and advanced imaging are all useful tools if there is real suspicion of an underlying systemic disease (red flag signs), or if the radiographs do not yield a possible explanation for relentless lower back pain [12]. The best first test for patients with low back pain who require advanced imaging is the MRI without contrast. Indeed, an MRI with a gadolinium contrast medium (gadolinium-based MRI) would allow the clinician to distinguish scars such as those in patients who have undergone previous back surgery [13]. A CT scan can be performed instead if the patient cannot receive an MRI.

Risk Factors

Back pain can develop as a result of many different factors, such as obesity, age, job satisfaction, educational status, occupational factors, and psychosocial factors. One of the most common factors in the development of low back pain is

age: studies have determined that the highest incidence of lower back pain can be found in patients age 30 and above, which number continuously increases until 60-65. This also applies to more severe forms of back pain [14]. Other studies of the adolescent population have also shown an increase in low back pain, which is becoming increasingly usual [15]. Low educational status is also an indicator of the prevalence of low back pain [16], which happens to be a solid forecaster of poorer outcomes and longer pain episodes. Psychosocial factors are also associated with a greater incidence of low back pain, such as anxiety, stress, depression, and certain types of pain behavior. However, these conditions will likely set the patient up for longer-lasting episodes of back pain which may then qualify as chronic [16]. Alternately, patients who are unhappy in their place of employment or with their work situation have a higher risk of experiencing an acute episode of back pain, as well as having it transition to a chronic issue. Occupational factors also stand to increase said prevalence, such as when a patient's employment requires demands of a physical nature. A recent systematic review has found that elements such as whole-body vibrations, manual handling, twisting, and bending are low back pain's definite risk factors [17]. Finally, an increased incidence of low back pain has also been observed in obese patients with a body mass index of more than 30 kg/m² [16].

Treatment

Chronic low back pain has multiple varying definitions which largely depend on the authority or resource. However, it is ordinarily accepted to imply the presence of pain that is unresponsive to treatment for three to six months. There is also debate as to the different medical interventions possible to treat low back pain. However, it is generally agreed that these refer to drug administration/prescription, rehabilitation, injection therapy, and surgery.

Plenty of different medications are available and can be selected from, and many articles have examined their effects and come up with corresponding conclusions: CLBP can be treated with opioids and NSAIDs, as these were proven effective against a placebo, but the potentially catastrophic side effects of these medications are overwhelmingly likely to counteract their advantages in the long term. This refers specifically to opioids. The administration of antidepressants did not exhibit any convincing improvement concerning non-specific CLBP and was not proven effective against a placebo [18]. As for injection therapy (such as epidural or facet), it has been determined that there is, at the moment, insufficient evidence supporting the effectiveness of this treatment according to a Cochrane review from the Spine Journal. However, for specific subcategories of patients, this therapy has not yet been eliminated and may prove to be useful [19].

CONCLUSION

Low back pain tends to increase in patients age 30 and above, and those numbers tend to rise steadily until age 65. No treatment has been developed that would eradicate it, thus

rendering it one of the main reasons for patient visits to their physician. Opioids tend to be prescribed for pain management, alongside NSAIDs, both of which tend to have overwhelming negative side effects in the long term.

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REFERENCES

1. Praemer A, Furner S, Rice DP. Musculoskeletal Conditions in the United States, edn 2. Rosemont, IL: American Academy of Orthopaedic Surgeons; 1999.
2. Deyo RA, Tsui-Wu YJ. Descriptive epidemiology of low-back pain and its related medical care in the United States. *Spine*. 1987;12(3):264-8.
3. National Center for Health Care Statistics. Physician visits, volume, and interval since last visit, United States- 1971. Series 10, No. 97. Hyattsville, MD: US Department of Health and Human Services; 1975.
4. Stewart WF, Ricci JA, Chee E, Morganstein D, Lipton R. Lost productive time and cost due to common pain conditions in the US workforce. *JAMA*. 2003;290(18):2443-54.
5. Choler U, Larsson R, Nachemson A, Peterson LE. Back Pain. SPRI Report No. 188. Stockholm, Sweden: SPRI; 1985.
6. Haldeman S, Dagenais S. A supermarket approach to the evidence-informed management of chronic low back pain. *Spine J*. 2008;8(1):1-7.
7. National Institute of Neurological Disorders and Stroke. Pain: Hope Through Research. 2017 June 9. Available from: <https://www.ninds.nih.gov/Disorders/Patient-Caregiver-Education/Hope-Through-Research/Pain-Hope-Through-Research>.
8. van Tulder M, Becker A, Bekkering T, Breen A, Gil del Real MT, Hutchinson A, et al. Chapter 3 European guidelines for the management of acute nonspecific low back pain in primary care. *Eur Spine J*. 2006;15(Suppl 2):s169-91.
9. Deyo RA, Rainville J, Kent DL. What can the history and physical examination tell us about low back pain?. *JAMA*. 1992;268(6):760-5.
10. Rubinstein SM, van Tulder M. A best-evidence review of diagnostic procedures for neck and low-back pain. *Best Pract Res Clin Rheumatol*. 2008;22(3):471-82.
11. Chou R. In the clinic. Low back pain. *Ann Intern Med*. 2014;160(11):ITC6-1.
12. Chou R, Qaseem A, Snow V, Casey D, Cross JT, Shekelle P, et al. Diagnosis and treatment of low back pain: a joint clinical practice guideline from the American college of physicians and the American pain society. *Ann Intern Med*. 2007;147(7):478-91.
13. Wilkinson LS, Elson E, Saifuddin A, Ransford AO. Defining the use of gadolinium-enhanced MRI in the assessment of the postoperative lumbar spine. *Clin Radiol*. 1997;52(7):530-4.
14. Dionne CE, Dunn KM, Croft PR. Does back pain prevalence really decrease with increasing age? A systematic review. *Age Ageing*. 2006;35(3):229-34.
15. Jeffries LJ, Milanese SF, Grimmer-Somers KA. Epidemiology of adolescent spinal pain: a systematic overview of the research literature. *Spine*. 2007;32(23):2630-7.
16. Hoy D, Brooks P, Blyth F, Buchbinder R. The epidemiology of low back pain. *Best Pract Res Clin Rheumatol*. 2010;24(6):769-81.
17. Hoogendoorn WE, van Poppel MN, Bongers PM, Koes BW, Bouter LM. Systematic review of psychosocial factors at work and private life as risk factors for back pain. *Spine*. 2000;25(16):2114-25.
18. Sullivan Mark D, Howe Cathrine Q. Opioid therapy for chronic pain in the United States: promises and perils. *Pain*. 2013;154(1):S94-100.
19. Staal JB, De Bie RA, De Vet HC, Hildebrandt J, Nelemans P. Injection therapy for subacute and chronic low back pain: an updated Cochrane review. *Spine*. 2009;34(1):49-59.