Original Article

ORAL MEDICATIONS IN PATIENTS SUFFERING FROM ACUTE LOW BACK PAIN- NARRATIVE REVIEW

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Abstract

Low back pain, whether with or without sciatica, is usually self-limiting and does not indicate a major underlying condition. Reassurance, pain medicines, and encouragement to stay active are usually enough for most people. In some patients, "red flag" abnormalities linked to an elevated risk of cauda equina syndrome, malignancy, infection, or fracture necessitate a more thorough examination. These patients will also require more frequent monitoring and, in certain situations, an immediate referral to a surgeon. Imaging can be postponed for at least four to six weeks in individuals with nonspecific mechanical low back pain, allowing the discomfort to subside. Acetaminophen, nonsteroidal anti-inflammatory medications, skeletal muscle relaxants to stay active have all been shown to be useful. When compared to sham therapy, spinal manipulation therapy may produce short-term improvements, but not when compared to standard treatments. The natural history of back pain, its overall favorable prognosis, and treatment suggestions should be the emphasis of patient education.

Keywords: Amphetamines, Atypical Opioids, Low Back Pain, NSAIDs, Opioids, Oral Medications

INTRODUCTION

Low back pain (LBP) is the leading cause of years spent disabled around the globe [1]. Sixty-eight percent of physician visits in the United States (US) involve medication therapy, with analgesics, antihyperlipidemic medicines, and antidepressants being the most commonly prescribed therapeutic groups [2]. In the United States, 860.5 million medications are prescribed each year, while the global population is given 4 trillion doses of medication [2–4]. Between 2015 and 2018, approximately half of all adults in the United States utilized at least one prescription in a 30-day period. A quarter of adults in the United States and the United Kingdom (UK) said they were taking three or more medications, and more than one-tenth of US adults said they were taking five or more [2, 5].

Low back pain is frequently treated with nonsteroidal anti-inflammatory medications (NSAIDs), acetaminophen, and opioids by primary care physicians [6–8]. Non-pharmacological LBP therapy, such as patient education, being physically active, and manual therapies, is also encouraged by primary care professionals, according to clinical practice guidelines (CPG). Integration of non-prescribing physicians who manage LBP into health care facilities has shown high satisfaction and the ability to reduce opiate use for pain [9–12]. Although these clinicians do not often manage drugs, they will frequently encounter patients who are being treated for their LBP with pharmaceuticals.

As a first-line treatment, it was implemented. Low back pain is the leading cause of disability worldwide[13]. According to research, about 40% of adults have had low back discomfort that lasts more than one day and have sought medical guidance at least once in their lives [14]. When an episode of low back pain lasts less than six weeks, it is classified as acute [14]. NSAIDs are widely given by doctors around the world, particularly orthopedic surgeons, and are widely available in India as over-the-counter analgesics. NSAIDs (nonsteroidal anti-inflammatory drugs) (NSAIDs). Antimicrobial medicines are the most regularly used, and thus the most common cause of drug-induced liver damage (DILI) [15]. It's critical to be informed of the medications' potential side effects. NSAIDs are commonly given by doctors worldwide to treat acute, recurring, or chronic pain, and they are readily available as over-the-counter analgesics in India [16].

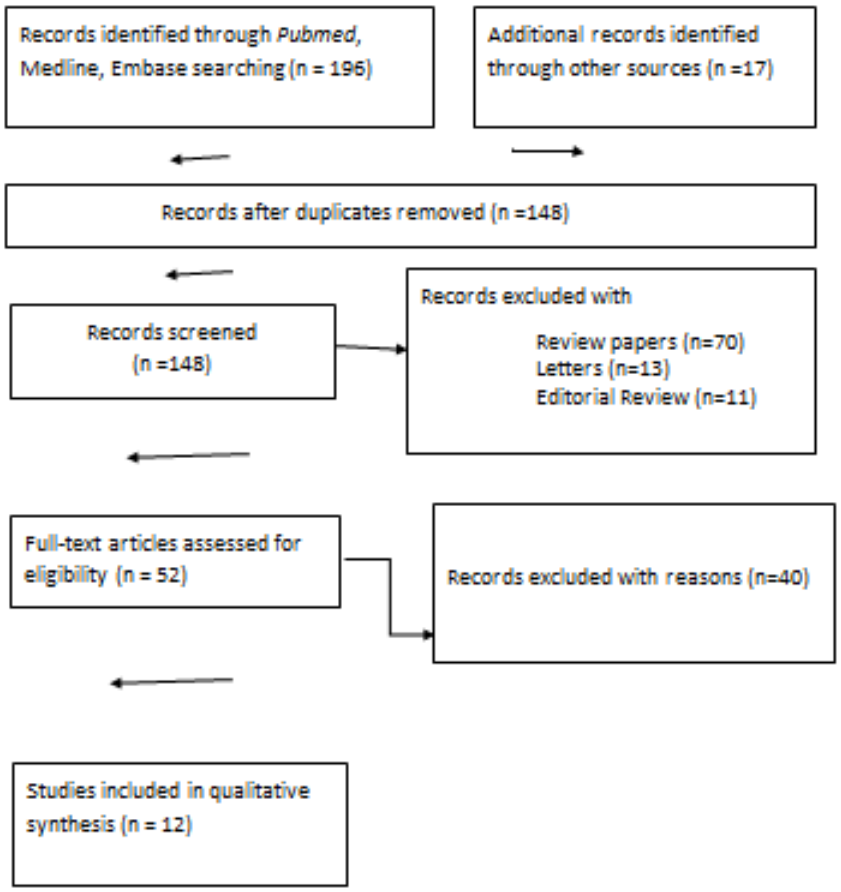
As a symptom-related reason for doctor visits, low back discomfort is only second to upper respiratory illnesses. There is evidence of excessive imaging and surgery for low back pain in the United States and around the world, and many believe

the problem is related to "over medicalization" in the search for the right treatment [17]. Rather than just relieving pain, pain management should attempt to holistically rehabilitate individuals [18]. Modern management stresses a 48-hour bed rest period and a quick resumption to physical activities. Medications can assist with this. The focus of this research is on all therapy options for all sorts of acute low back problems.

METHODS

The following goals are being pursued with this review: Oral medications for all sorts of acute low back problems.
The electronic databases PubMed, Medline, Embase, and Google were used to conduct a literature search in English. Low Back pain OR NSAIDs OR Opioids OR Oral Medications were the search criteria. The writers' firsthand knowledge and experience in the topic helped them archive pertinent papers. This review includes articles that meet the following criteria: 1. English studies are covered. 2. Studies from the last ten years are also included. 3. Studies that are solely focused on medications in lower back pain are included.

Figure: PRISMA flowchart of included studies



HISTORY AND PHYSICAL EXAMINATION

The clinical examination's purpose is to identify patients who require prompt surgical treatment and those whose symptoms point to a more serious underlying illness, such as cancer or infection. Patients experiencing symptoms of cauda equina syndrome, such as increasing neurologic impairments, bowel or bladder problems, bilateral sciatica or leg weakness, or numbness in the saddle distribution, should be sent to a surgeon as soon as possible. Physicians should ask about any red flag findings and, if necessary, request imaging and laboratory tests.

IMAGING AND LABORATORY EVALUATION

Because most episodes of acute low back pain do not have a significant origin and heal with conservative treatment, urgent imaging is rarely necessary. The use of imaging is recommended in all main guidelines for the treatment of acute low back pain. [19-23] In the absence of red flag results, conservative therapy for four to six weeks is safe and prudent, and imaging is not necessary. The patient's symptoms and the strength of clinical suspicion for the underlying condition drive the timing of the first- and second-line evaluations. It may be required to proceed to advanced imaging right away if clinical suspicion is high enough. If magnetic resonance imaging (MRI) is not readily available, or if the cost is prohibitive, computed tomography may be adequate.

In asymptomatic people, diagnostic imaging of the spine has a high rate of aberrant findings. Herniated discs were observed in 9 to 76 percent of patients in investigations of lumbar spine MRI examination in asymptomatic adults, bulging

discs in 20 to 81 percent, degenerative discs in 46 to 93 percent, and annular tears in 14 to 56 percent [24]. As a result, imaging should only be utilized in carefully chosen individuals and interpreted in accordance with clinical guidelines.

TREATMENT

The following section examines treatment options for acute low back pain, as well as the data that supports them.

NSAIDS AND ACETAMINOPHEN

For the treatment of acute low back pain, nonsteroidal anti-inflammatory medications (NSAIDs) are prescribed. A systematic evaluation of 51 randomised controlled studies that compared NSAIDs to placebo found substantial evidence that NSAIDs enhance pain control significantly. There is significant evidence that different NSAIDs work in the same way [25]. According to a meta-analysis of typical oral drugs for acute pain, two or three patients must be treated for one patient to see at least a 50% improvement in pain over four to six hours (i.e., NNT = 2 or 3)[26]. The evidence on whether NSAIDs are better than acetaminophen for treating acute low back pain is mixed[25].In recommended levels (i.e., up to 4 g per day in adults without liver problems), acetaminophen can be a useful adjuvant that avoids the renal and gastrointestinal toxicities associated with NSAIDs.

OPIOIDS

Oral opioids are needed to control the pain in some people with acute low back pain, especially those with sciatica. Opioids should be regarded as a second- or third-line analgesic treatment for most patients, and they should only be administered for a limited time. There is little information from well-designed research about the benefits and hazards of opioid use in acute low back pain, and few comparisons to other pain medications have been made. When compared to NSAIDs or acetaminophen, several small studies have found no substantial benefit of opioid use in symptom alleviation or return to work [25]. Pruritus, constipation, sleepiness, and addiction are all side effects of opioids.

MUSCLE RELAXANTS

Muscle relaxants are effective in the treatment of nonspecific acute low back pain, according to two meta-analyses [27, 28]. Individuals using cyclobenzaprine (Flexeril), for example, were substantially more likely than placebo patients to report improvement in low back pain symptoms after two weeks (NNT = 3)[27]. The first one or two weeks of treatment with muscle relaxants are the most helpful. There is some evidence that when skeletal muscle relaxants are used with NSAIDs, they have significant benefits [29] The effectiveness of several skeletal muscle relaxants is similar[30].

Drowsiness and dizziness are common side effects of skeletal muscle relaxants, which can restrict their effectiveness. Patients receiving cyclobenzaprine at a dose of 10 mg three times per day were nearly twice as likely as those taking a placebo to report side effects (53 versus 28 percent, respectively)[30] Adverse effects are also common with other muscle relaxants[28]. Carisoprodol (Soma) has been linked to abuse and addiction, and it is classified as a schedule IV substance in some jurisdictions. Low-dose cyclobenzaprine (i.e., 5 mg rather than 10 mg) and metaxalone (Skelaxin) provide effective symptom alleviation with fewer side effects [31].

CORTICOSTEROIDS

In patients with acute low back pain, there are no studies that support the use of oral steroids. Patients with radicular symptoms who have not responded to two to six weeks of conservative treatment may benefit from epidural steroid injections. Epidural steroid injections have shown short-term (weeks to months) but not long-term benefit in pain and impairment in randomized trials [32-34].

ATYPICAL OPIOIDS

Many guidelines mentioned tramadol in the context of opioid treatment; nevertheless, due to its opioidergic, noradrenergic, and serotonergic characteristics, tramadol is usually considered an atypical opioid [35]. In their recommendations, three CPGs clearly distinguished tramadol from opioids. Tramadol was suggested for persistent LBP by two CPGs (2/3 CPGs), one as a second choice and the other as a fourth choice option. No CPGs indicated the strength of tramadol recommendations. When administering tramadol with a tricyclic antidepressant (TCA) or a serotonin and norepinephrine reuptake inhibitor (SNRI), caution was urged, with a recommendation to gradually titrate to a maximum of 400 mg per day. Dizziness, sleepiness, asthenia, gastrointestinal problems, and the danger of hypoglycemia were all indicated as possible adverse effects [35].

ANTIBIOTICS

Oral antibiotics were considered in certain guidelines, but none were recommended for LBP. According to professional opinion, the strength of the suggestions mentioned ranged from moderate to very poor. There were no recommendations in favor of antibiotics in any of the guidelines, so there was no guidance on dosage or titration. In chronic LBP with MRI verified disc prolapse, the solitary RCT cited showed an increase in adverse outcomes as well as an improvement in health usage [35].

CONCLUSION

Based on the data from the studies that met the inclusion criteria, we believe that prescribing opioids for the treatment of subacute or chronic LBP should be done with caution. Opioids have a higher risk of side effects, and pain outcomes do not appear to be better than nonsteroidal anti-inflammatory drugs. And, while only three low-quality studies found that non-opioid comparators outperformed opioids, pain outcomes for the opioid intervention do not appear to be superior to non-steroidal anti-inflammatory medications. Furthermore, the study lacks long-term follow-up data, which would allow researchers to examine the withdrawal effect that has resulted in the epidemic.

REFERENCES

1. GBD 2015 Disease and Injury Incidence and Prevalence Collaborators. Global, regional, and national incidence, prevalence, and years lived with disability for 310 diseases and injuries, 1990-2015: a systematic analysis for the Global Burden of Disease Study 2015 (published correction appears in Lancet. 2017 Jan 7; 389(10064):e1). Lancet 2016; 388:1545–1602.
2. Centers for Disease Control and Prevention. Therapeutic Drug Use. 2021. https://www.cdc.gov/nchs/fastats/drug-use-therapeutic.htm. Accessed May 29, 2022.
3. NHS Digital. Health survey for England 2016: Prescribed Medicines. 2017. http://healthsurvey.hscic.gov.uk/media/63790/HSE2016-presmed.pdf. Accessed May 29, 2022.
4. Quintiles IMS Institute. Outlook for global medicines through 2021: Balancing cost and value. 2016. https://www.iqvia.com/-/media/iqvia/pdfs/institute-reports/global-outlook-for-medicines-through-2021.pdf. Accessed May 29, 2022.
5. Marengoni A, Angleman SRM. Aging with multimorbidity: a systematic review of the literature. Ageing Res Rev. 2011;10:430–9.
6. Goertz CM, Long CR, Englign C, Meeker WC, Marchiori. Patient-reported physician treatment recommendations and compliance among U.S. adults with low back pain. J Altern Complement Med 2021; 27:S99–105.
7. Roseen EJ, Conyers FG, Atlas SJ, Mehta DH. Initial management of acute and chronic low back pain: responses from brief interviews of primary care providers. J Altern Complement Med 2021; 27.
8. Stevans JM, Delitto A, Khoja SS, Patterns CG, et al. Risk factors associated with transition from acute to chronic low back pain in US patients seeking primary care. JAMA Netw Open. 2021;4:e2037371.
9. Goertz CM, Long CR, Vining RD, et al. Efect of usual medical care plus chiropractic care vs usual medical care alone on pain and disability among US service members with low back pain. JAMA Netw Open. 2018;1:e180105.
10. Lisi AJ, Salsbury SA, Twist EJ, Geortz CM. Chiropractic integration into private sector medical facilities: a multisite qualitative study. J Altern Complement Med. 2018;24:792–800.
11. Giannitrapani KF, Ackland PE, Holiday J, et al. Provider perspectives of battlefeld acupuncture: advantages, disadvantages and its potential role in reducing opioid use for pain. Med Care. 2020; 58(Suppl 2):S88–93.
12. Corcoran KL, Bastian LA, Gunderson GC, et al. Association between chiropractic use and opioid receipt among patients with spinal pain: a systematic review and meta-analysis. Pain Med. 2020; 21:e139-145.
13. Murray CJ, Vos T, Lozano R, Naghavi M, Flaxman AD, Michaud C, et al. Disability-adjusted life years (DALYs) for 291 diseasess and injuries in 21 regions, 1990-2010: a systematic analysis for the global burden of diseases study 2010. Lancet. 2012;380(9859):2197–223.
14. Nikose S, Khan S, Gudhe M, Patil B, Singh PK. EFFICACY OF DICLOFENAC VERSUS COMBINATION OF IBUPROFEN AND PARACETAMOL, IN ACUTE LOW BACK PAIN WITH SCIATICA.EJPMR. 2016.
15. Nikose S, Arora M, Singh PK, Naik S, Khan S, Nikose D. Hepatotoxicity and Changes in Liver Enzymes Due to Use of Non-Steroidal Anti Inflammatory Drugs (NSAIDs) in Non-Traumatic Musculoskeletal Painful Disorders. Molecule Enzymol Drug Target. 2015;1(2).
16. DeyoRA, Weinstein JN. Low back pain. N Engl J Med. 2001; 344(5):363–70.
17. Breivik H, Eisenberg E, O'Brien T. The individual and societal burden of chronic pain in Europe: the case for strategic prioritization and action to improve knowledge and availability of appropriate care. BMC Public Health. 2013; 13:1229.
18. Frank A. Low back pain. BMJ. 1993; 306 (6882):901–9.
19. Bradley WG Jr, Seidenwurm DJ, Brunberg JA, Davis PC, De La Paz RL, Dormont D, et al., for the American College of Radiology. ACR appropriateness criteria: low back pain. Accessed May 29, 2022.
20. Australian Acute Musculoskeletal Pain Guidelines Group. Evidencebased management of acute musculoskeletal pain. Accessed May 29, 2022.
21. Institute for Clinical Systems Improvement. Health care guideline: adult low back pain. 12th ed. September, 2006. Accessed May 29, 2022.
22. The Norwegian Back Pain Network. Acute low back pain: interdisciplinary clinical guidelines. Accessed May 29, 2022.
23. Van Tulder M, Becker A, Bekkering T, Breen A, del Real MT, Hutchinson A, et al., for the COST B13 Working Group on Guidelines for the Management of Acute Low Back Pain in Primary Care. 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.
24. Jarvik JG, Deyo RA. Diagnostic evaluation of low back pain with emphasis on imaging. Ann Intern Med 2002; 137:586-97.
25. Van Tulder MW, Scholten RJ, Koes BW, Deyo RA. Nonsteroidal antiinflammatory drugs for low back pain. Cochrane Database Syst Rev 2006 ;(2):CD000396.
26. Acute pain. Bandolier Extra, February 2003. Accessed May 29, 2022, at: http://www.jr2.ox.ac.uk/bandolier/Extraforbando/APain.pdf.
27. Browning R, Jackson JL, O'Malley PG. Cyclobenzaprine and back pain: a meta-analysis. Arch Intern Med 2001; 161:1613-20.
28. Van Tulder MW, Touray T, Furlan AD, Solway S, Bouter LM. Muscle relaxants for non-specific low back pain. Cochrane Database Syst Rev 2003 ;(2):CD004252.
29. Beebe FA, Barkin RL, Barkin S. A clinical and pharmacologic review of skeletal muscle relaxants for musculoskeletal conditions. Am J Ther 2005; 12:151-71?
30. Chou R, Peterson K, Helfand M. Comparative efficacy and safety of skeletal muscle relaxants for spasticity and musculoskeletal conditions: a systematic review. J Pain Symptom Manage 2004; 28:140-75.
31. Toth PP, Urtis J. commonly used muscle relaxant therapies for acute low back pain: a review of carisoprodol, cyclobenzaprine hydrochloride, and metaxalone. Clin Ther 2004; 26:1355-67.
32. Arden NK, Price C, Reading I, Stubbing J, Hazelgrove J, Dunne C, et al. A multicentre randomized controlled trial of epidural corticosteroid injections for sciatica: the WEST study. Rheumatology (Oxford) 2005; 44:1399-406.
33. Nelemans PJ, de Bie RA, de Vet HC, Sturmans F. Injection therapy for subacute and chronic benign low back pain. Cochrane Database Syst Rev 2000 ;(2):CD001824.
34. Wilson-MacDonald J, Burt G, Griffin D, Glynn C. Epidural steroid injection for nerve root compression: a randomised, controlled trial. J Bone Joint Surg Br 2005;87:352-5.
35. Price MR, Cupler ZA, Hawk C, Bednarz EM, Walters SA, Daniels CJ. Systematic review of guideline-recommended medications prescribed for treatment of low back pain. Chiropractic Manual Therapies. 2022; 30(1):1-4.