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THE PROPER APPROACH TO SEVERE BACK PAIN MANAGEMENT IN THE EMERGENCY DEPARTMENT

[1]Dr. Batool AL-Mishkab
[1]Dammam Medical Complex

Abstract:
Low back pain (LBP) is a well-known clinical presentation in the ED, and a frequent source of handicap globally. This rapid review provides clinicians managing LBP in the ED a summary of the most effective offered proof to take the chance of stratify and enhance the quality of care, optimizing patient results. We conducted electronic search for articles concerning severe Back pain management in the emergency department, using major biomedical databases (CINAHL, EMBASE, MEDLINE) using comprehensive search strategies for all relevant articles published through 2018.Low-back pain (LBP) influences concerning 40% of individuals at some time in their lives. In the visibility of "red flags", more examinations should be done to dismiss underlying issues; nevertheless, biomedical imaging is presently excessive used. LBP entails big in-hospital and out-of-hospital financial expenditures, and it is additionally the most prevalent musculoskeletal condition seen in emergency departments (EDs). The examination must be routed towards uncovering the red flags, which will certainly direct the analysis process. In the lack of red flags or in those scenarios that the analysis for the red flags is unfavorable, reward patients cautiously.

Corresponding author:
Dr. Batool AL-Mishkab,
Dammam Medical Complex.

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INTRODUCTION:

Globally, about 40% of individuals experience low-back pain (LBP) at some point in their lives, with estimates reaching 80% in the established world [1]. Approximately 9%- 12% of people (632 million) experience pain in the back at any provided moment in time, and virtually a quarter of them (23.2%) state they have actually suffered for about a month [1]. These pains usually start in between 20 and 40 years old. LBP is most prevalent amongst people aged in between 40 and 80 years. The overall number of people impacted is anticipated to enhance with the aging of the populace [1]. LBP can be categorized by period, as acute (soreness long lasting less than 6 weeks), subacute (6 - 12 weeks), or chronic (greater than 12 weeks). A lot of cases of LBP do not have a clear cause, however are thought to be the result of musculoskeletal issues, such as sprains or muscle mass strains [2]. In many episodes of LBP, a certain underlying cause is not determined and even sought. In chronic patients, of course, or in the presence of a red flag, imaging has a precise role to play. Nevertheless, using such investigations in cases of LBP appears to have raised, because of a safety mindset [2]. LBP involves huge in-hospital and out-of-hospital economic prices. It is among one of the most common causes of soreness in adults, and is in charge of a great deal of shed working days. It is likewise one of the most common bone and joint ailment seen in emergency departments (EDs) [2].

Low back pain (LBP) is a well-known clinical presentation in the ED, and a frequent source of handicap globally. This rapid review provides clinicians managing LBP in the ED a summary of the most effective offered proof to take the chance of stratify and enhance the quality of care, optimizing patient results.

METHODOLOGY:

We conducted electronic search for articles concerning severe Back pain management in the emergency department, using major biomedical databases (CINAHL, EMBASE, MEDLINE) using comprehensive search strategies for all relevant articles published through 2018. Our search strategy used following MeSH terms through the medical databases; “back pain, lower back pain, management, therapy, emergency department”. And furthermore, references of included studies were screened for more relevant articles. Restriction to English language with human subject was applied.

DISCUSSION:

- **HISTORY AND PHYSICAL EXAMINATION**

In most patients with low back pain, one need to be able to omit any type of substantial life or neurologic dangers with a focused history and physical examination, without any diagnostic testing. The key things to recognize are the red flags that, if present, will certainly raise one's uncertainty of possibly significant condition. The presence of warnings overviews whether further analysis screening should be executed. In the absence of red flags, diagnostic testing is of limited utility since 90% of these patients' signs and symptoms will deal with within 4 weeks [3].

HISTORY:

A red flag is increased if the patient is younger than 20 or older than 50 years because there is a greater possibility of a major root cause of the ache, such as tumor or infection. Patients under the age of 20 years also have a higher incidence of congenital, developmental, and bony problems, such as spondylolisthesis and spondylolysis. In addition, those patients older than 50 years have a greater likelihood of other serious causes, such as a rupturing abdominal aortic aneurysm, vertebral crack, pancreatitis, and other intra-abdominal processes.

The next area of concern relating to back pain is the duration of the symptoms. Although pain in the back is a continuum of signs and symptoms, it is useful to divide it right into groups based upon the period: acute (0-6 weeks), subacute (6-12 weeks), chronic (> 12 weeks), and persistent back pain [6]. Nonacute soreness elevates a red flag because 80% to 90% of patients' signs solve by 4 to 6 weeks [3],[4]. For that reason, the patient with subacute or chronic pain in the back ought to be assessed further using diagnostic screening. One circumstance in which one must be less rigorous in using this policy remains in the patient that has actually had ache for 4 to 6 weeks however has actually never ever been correctly reviewed or dealt with. In these patients, it is appropriate to observe him or her carefully and to delay the analysis evaluation while observing carefully for improvement in the signs.

The patient needs to be quized concerning any type of history of trauma. Significant injury increases a red flag with a concern for fracture. On top of that, small trauma in the senior even as minimal as dropping, elevates a similar suspicion of crack due to the bony changes that accompany age, primarily osteoporosis. If warnings occur with an issue of trauma, after that these patients call for evaluation making use of plain spinal radiography [5]. One must inquire about symptoms of systemic ailment. Especially constitutional symptoms such as fever,

chills, night sweats, malaise, and an undesired weight-loss raise a warning with a concern for infection or neoplasm as the etiology for the back pain. An undesirable weight reduction is specified as a loss of 10 extra pounds or greater over a %month duration that is not the result of weight loss or various other weight decrease approaches [6]. The relevance of these symptoms raises if the patient has any kind of threat elements for infection such as injection drug use, immunocompromised status, or a recent bacterial infection (e.g., a urinary tract infection or pneumonia). Injection drug use is a substantial danger factor for vertebral osteomyelitis and epidural abscess, and a lot of doctors take into consideration back soreness in a vaccine drug user as infection until verified otherwise. On top of that, recent genitourinary or gastrointestinal procedures incline the patient to infection because of a transient bacteremia.

Physical Examination

The physical checkup of the patient with low back pain can be finished rapidly yet extensively. The test resembles the background because it is routed toward finding red flags. As with all patient experiences, test of the essential signs is paramount. Fever, if present, increases a warning with a suspicion for an infectious process; however, the level of sensitivity of fever is frustrating, varying from 27% for tuberculosis osteomyelitis to 50% for pyogenic osteomyelitis and 83% for spinal epidural abscess [5]. In one research, approximately 2% of the patients with mechanical low neck and back pain that offered in the health care setting had a fever, most of which were attributed to a coexistent viral disorder [5]. Therefore, although the presence of a fever is concerning, it is not pathognomonic of a back infection, neither is the lack of fever comforting that a spinal infection is not present.

Table 1. Red Flags of the History and Physical Examination [2-6].

History	**Physical Examination**
Pain longer than 6 weeks	Fever
Age less than 18 or over 50 years	Point vertebral body tenderness
Major trauma in the young or minor trauma in the elderly patient	Neurologic deficits
Neurologic complaints (e.g./ paresthesias, anesthesia, and weakness)	Positive straight-leg raise
Incontinence of bowel or bladder	
Night pain	
Unrelenting pain	
Fever, chills, and night sweats	
History of IV drug use	
History of cancer	

- **DIAGNOSTIC STUDIES**

The majority of patients who present to the ED with acute low pain in the back do not manifest any kind of warnings and hence need no diagnostic testing. These patients usually have a benign cause for their back pain and will attain sign resolution within 4 weeks [3]. Delaying diagnostic screening for 6 weeks stays clear of unnecessary cost and radiation exposure. Patients that do not resolve or dramatically improve their symptoms by 6 weeks are worthy of additional evaluation making use of spine radiography, complete blood count (CBC), urinalysis (UA), and the erythrocyte sedimentation rate (ESR), as indicated in the complying with conversation.

Laboratory Testing

A CBC, ESR, and UA are indicated in those patients in whom there is a suspicion of infection or tumor. In patients with infection, the white blood cell (WBC) count may be typical or raised; however, the ESR is usually raised. In patients with neoplastic disease, these examinations are typically normal, except the ESR, which is sometimes elevated. A UA help in identifying primary or coexistent renal ailment that symptomatically refers to the back.

Plain Spinal Radiography

Simple spine radiography should be acquired when red flags increase concern for tumor, infection, or fracture, or if neurologic disorder is found on evaluation. As a whole, one demand get only the anteroposterior (AP) and lateral views of the lumbar spine, omitting the bilateral oblique views and the cone-down sight of the L5 and S1 joint. The factor for leaving out the cone-down sight is that this area is normally well visualized on the lateral view. The reason for leaving out the oblique forecasts is that they give extra information in only 4% to 8% of instances [6] Additionally, this extra information is typically insignificant for treatment objectives; such as an unilateral spondylolysis, which is typically an old results [6],[7]. By limiting the set to the two sights, one saves the patient considerable cost and

lowers the radiation exposure by two thirds. If one feels the need to acquire the additional sights, obtain them only after reviewing the AP and lateral sights.

Magnetic Resonance Imaging

Magnetic resonance (MR) imaging is the gold criterion examination for many emergent settings in examining the patient with pain in the back. MR imaging uses the best resolution of the spine canal and spinal cord. Additionally, MR imaging offers outstanding visualization of the disk space and vertebral bodies, even enabling the identification of sores within the bone marrow prior to any cortical devastation has actually taken place [8],[9]. MR imaging ought to be gotten emergently in those patients with back soreness and acute neurologic deterioration, as seen in epidural compression of the spine or cauda equina from tumor, infection, or hematoma. Limitations of MR imaging are the deficiency of 24-hour accessibility, time required for test, claustrophobia of patients, and its impacts on magnetic and metallic items. MR imaging is contraindicated in patients with a pacemaker, intracardiac cords, specific sorts of mechanical heart valves, some intracranial aneurysm clips, and ferromagnetic intraocular foreign bodies.

CT Scanning

CT scanning is superior to MR imaging in reviewing bony detail of the spine, specifically the aspect joints and the posterior elements [9]. The CT check is likewise beneficial for recognizing transmittable and neoplastic lesions of the spine. When used combined with myelography (CT myelogram), CT is an excellent diagnostic instrument that is as efficient as MR imaging and should be made use of as the substitute when MR imaging is impractical [9],[10]. Other than when it comes to spine fractures, CT without myelography is prevented because noncontrast CT does not imagine the subarachnoid space well, and, therefore, cannot properly diagnose cauda equina tumors and, other intradural sores that can mimic lumbar disc herniations [10].

Radionuclide Imaging

Radionuclide imaging (i.e., bone scanning) is not a research that normally gets emergently on patients with acute back pain in the ED. These studies are made use of largely to localize contagious or metastatic sores of the spine; nonetheless, the findings are nonspecific and can disclose degenerative modifications that can be difficult to separate from serious causes for the signs. Today the use of these researches is nonemergent, mostly restricted to checking certain spine illness [10].

Table 2. Existing evidence for LBP across the clinical cycle of care in ED [10-25].

1.Screen and assess for 'red flags'
Neurological signs: • bilateral numbness or weakness in the lower limbs, gait disturbance or ataxia. • loss of bladder/bowel function (urinary retention, incontinence, absent anal sphincter tone, patulous anus, reduced/absent bulbocavernosus reflex), sexual dysfunction, saddle anaesthesia. • unilateral multiple nerve root distribution of numbness and weakness.
Risk factors or signs of infection, systemic disease or malignancy: persistent fever, night sweats, rash, abnormal laboratory exams, intravenous drug use, recent bacterial infection, immunocompromised, history of malignancy or unexplained weight loss, nocturnal pain, <20 years and >50 years of age, non-mechanical pain.
History of trauma with any focal spinal tenderness on palpation, contusion or abrasion, altered consciousness or distracting injury.
Medication effects (i.e. corticosteroid or anticoagulant use).
Persistent or intractable pain not responding to appropriate treatment.
2.Imaging only indicated in trauma or red flags
X-ray indicated in suspected vertebral compression fracture.
MRI indicated in presence of neurological abnormalities or suspected malignancy.
CT indicated in known high-velocity trauma, poor visualization of vertebral fracture on x-ray, or if MRI contraindicated.
Pathology tests not routinely recommended unless suspected malignancy, infection, or requiring admission.
3.Pain relief is an important aspect of ED management of LBP
a.Pharmacological management
First-line analgesics should include paracetamol or ibuprofen (with consideration of their side-effect profiles in relation to the patient and their adequacy in relieving pain).
Avoid the use **of opioids** unless in some cases with severe pain; if prescribed, short-acting doses, for a limited duration, with consideration of the risk for misuse and abuse.
b.Non-pharmacological management
Education and reassurance: good prognosis, avoid bed rest, advice for "self care", stay active and continue with normal activities; return to ED if 'red flags' arise.
Heat and/or cold packs, according to availability and patient preference.

Exercise recommendations: increase physical activity with limited focus on specific exercise prescription.
4.Referrals
GP: Patients should be encouraged to follow-up with their GP for non-specific LBP and non-serious conditions.
Specialist: Recommended in the presence of serious pathology or red flags.
Physiotherapy: Those patients unlikely to improve with aforementioned pain relief strategies may benefit from ongoing non-pharmacological treatments with a Physiotherapist.

- **TREATMENT OF LBP**

In initiatives to stop disability, in 2007 the American College of Physicians (ACP) and the American Pain Society (APS) established clinical method guidelines for the diagnosis and management of acute and chronic LBP [21]. Three of the seven standards address therapy and consist of: 1) offering patient instruction concerning the training course of the problem and self-care, 2) the use of medications with proven efficacy, and 3) the use of non-pharmacologic therapies with tried and tested efficiency [27]. There were only three treatments with "good" evidence to sustain a modest impact in the therapy of acute LBP.These three therapies include: 1) making use of non-steroidal anti-inflammatory drugs (NSAIDs), 2) the use of skeletal muscle mass relaxants, and 3) the application of shallow warmth [21]. For chronic LBP the six therapies that had "good" proof to generate a "moderate" result were: using NSAIDs, workout treatment, cognitive behavioral therapy, interdisciplinary rehabilitation, spinal adjustment, and tricyclic anti-depressants [21]. Remarkably, there was just "reasonable" evidence to sustain the modest impact of opioids, tramadol, and benzodiazepines [21]. Although writers of the ACP and APS standards include using medicines classified as opioids and benzodiazepines as a potential LBP therapy alternative, they likewise state that the possible injuries of therapy (i.e., possible dependency and overdose) ought to be thought about prior to starting therapy.

OPIOIDS:

The prescription of opioids is presently extremely topical because of the remarkable boost being used, the substantial variant in opioid-prescribing patterns in ED, the increase in opioidrelated damages such as hospitalisations and fatalities because of unintended poisoning and the equivalent charges to the government [22]. Analysis of opioid-prescribing patterns in EDs recommend an increase in making use of opioids instead of simple analgesics, an increasing fad of opioids recommending on discharge from EDs and considerable variations in between medical professionals in suggesting opioids particularly for LBP in ED [22],[23]. The proof in this fast testimonial clearly sustains a decrease in the use of opioids, with some write-ups recommending booking opioid use for severe ache, or recommended against opioid usage as a result of questionable effectiveness and enhanced unfavorable occasions [15-20]. Although early prescription of opioids in this setting may lower pain extent a lot more rapidly, research shows that this is related to longer term opioid use, raised expenses and boosted risk of negative occasions [24]. Consequently, opioid prescription in ED must be booked for the most serious cases of LBP, where straightforward analgesics have actually been insufficient.

CONCLUSION:

Low-back pain (LBP) influences concerning 40% of individuals at some time in their lives. In the visibility of "red flags", more examinations should be done to dismiss underlying issues; nevertheless, biomedical imaging is presently excessive used. LBP entails big in-hospital and out-of-hospital financial expenditures, and it is additionally the most prevalent musculoskeletal condition seen in emergency departments (EDs). The examination must be routed towards uncovering the red flags, which will certainly direct the analysis process. In the lack of red flags or in those scenarios that the analysis for the red flags is unfavorable, reward patients cautiously. The remainder of the background need to concentrate on making sure that there is no participation of the pulmonary, urinary, or gastrointestinal systems that present as back pain. Generally, patients with abdominal aortic aneurysm, pyelonephritis, renal colic, pancreatitis, and back lower lobe pneumonias existing with back pain. One should make sure that there are no associated historic elements or signs and symptoms to support these common conditions. LBP is a common presentation to all EDs and medical professionals must intend to stick to the evidence base and ideal technique management presented in this evaluation in order to enhance patient end results and utilize sources more effectively.

REFERENCES:

1. Hoy D, Bain C, Williams G, et al. A systematic review of the global prevalence of low back pain. Arthritis Rheum. 2012;64(6):2028–2037.
2. Borczuk P. An evidence-based approach to the evaluation and treatment of low back pain in the emergency department. Emerg Med Pract. 2013;15(7):1–23.
3. Bigos S, Bowyer 0, Braen G, et al: Acute low back problems in adults. In Clinical Practice Guideline, Quick Reference Guide Number 14.

Rockville, MD, US Department of Health and Human Services, Public Health Service, Agency for Health Care Policy and Research, AHCPR Pub. No. 95-0643, December 1994.
4. Hanley E: Distinguish the specific from the non-specific low back pain. Bull Hosp Joint. Dis 55:195196, 1996.
5. Deyo R, Rainville J, Kent D: What can the history and physical examination tell us about low back pain. JAMA 286:760-765, 1992.
6. Frymoyer J: Back pain and sciatica. N Engl J Med 318:291-300, 1988.
7. Deyo R: Rethinking strategies for acute low back pain. Emerg Med 28:38-56, 1995.
8. Rothman S: The diagnosis of infections of the spine by modern imaging techniques. Orthop Clin North Am 271531, 1996.
9. Walter J, Falvo T, Martich V: Nontraumatic neck and back pain. In Rosen P, Doris P, Barkin R (eds): Diagnostic Radiology in Emergency Medicine. Boston, Mosby-Year Book, 1992, pp 475-508
10. Deen HG: Diagnosis and management of lumbar disc disease. Mayo Clin Proc 71:283- 287. 1996.
11. Balakrishnamoorthy R, Horgan I, Perez S, Steele MC, Keijzers GB. Does a single dose of intravenous dexamethasone reduce symptoms in emergency department patients with low back pain and RAdiculopathy (SEBRA)? A double-blind randomised controlled trial. Emerg. Med. J. 2015; 32: 525–30.
12. Behrbalk E, Halpern P, Boszczyk BM et al. Anxiolytic medication as an adjunct to morphine analgesia for acute low back pain management in the emergency department: a prospective randomized trial. Spine (Phila Pa 1976) 2014; 39: 17–22.
13. Dugas AF, Lucas JM, Edlow JA. Diagnosis of spinal cord compression in nontrauma patients in the emergency department. Acad. Emerg. Med. 2011; 18: 719–25.
14. Jalloh I, Minhas P. Delays in the treatment of cauda equina syndrome due to its variable clinical features in patients presenting to the emergency department. Emerg. Med. J. 2007; 24: 33–4.
15. Lewis R, Williams N, Matar H et al. The clinical effectiveness and cost-effectiveness of management strategies for sciatica: systematic review and economic model. Health Technol. Assess. 2011; 15: 1–578.
16. Cantrill SV, Brown MD, Carlisle RJ et al. Clinical policy: critical issues in the prescribing of opioids for adult patients in the emergency department. Ann. Emerg. Med. 2012; 60: 499–525.
17. Chou R, Qaseem A, Snow V 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: 478–91.
18. Colorado Division of Workers' Compensation. Guideline Summary: Low Back Pain Medical Treatment Guidelines. Denver, CO: Colorado Division of Workers' Compensation, 2014.
19. Daffner R, Weissman B, Wippold FI et al. ACR Appropriateness Criteria: Suspected Spine Trauma. Reston, VA: American College of Radiology, 2012.
20. Work Loss Data Institute. Guideline Summary: Low Back – Lumbar & Thoracic (Acute & Chronic). 2013. [Cited 8 Apr 2015.] Available from URL: http://guideline. gov/content.aspx?f=rss&id=47586.
21. Chou R, Qaseem A, Snow V, Casey D, Cross JT, Jr, Shekelle P, Owens DK. 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):478–491. Practice Guideline Research Support, Non-U.S. Gov't.
22. Blanch B, Pearson SA, Haber PS. An overview of the patterns of prescription opioid use, costs and related harms in Australia. Br. J. Clin. Pharmacol. 2014; 78: 1159–66.
23. Tamayo-Sarver JH, Dawson NV, Cydulka RK, Wigton RS, Baker DW. Variability in emergency physician decision making about prescribing opioid analgesics. Ann. Emerg. Med. 2004; 43: 483–93.
24. Maher C, Underwood M, Buchbinder R. Non-specific low back pain. Lancet 2017; 389: 736–47.