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53 – How to Evaluate and Effectively Treat Low Back Pain?

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Introduction

Low back pain (LBP) is one of the most common complains and self-limited conditions in primary care patients. Some studies have found a prevalence of 85% at some point in the patient's life and an incidence of a recurrent episode of 24% in the first year.

For that reason, it is very important to perform a detailed clinical history, physical examination, recognize the indications for imaging and choose the best treatment options. This article will focus on the topics mentioned above.

Clinical evaluation of low back pain

Includes a history and physical examination, focusing on neurologic screening to exclude serious underlying pathology.

History and Risk Factors

- Characterization of pain: shape appearance, sudden or gradual onset. Also it is important to recognize if pain increases in the morning, or if the pain disrupts the patient's sleep, increases with rest (Inflammatory pain) or decreases with activity (mechanical low back pain).
- Location and radiation pain to lower limb.
- Type of pain: sharp pain, wraps around, burning.
- Associated with urinary symptoms or abdominal pain

Some features have been described that can influence the decision making process in low back pain. Those are called “yellow and red flags” and refer to clinical and psychosocial characteristics.

- Yellow Flags:
 - Smoking
 - Job dissatisfaction
 - Anxiety
 - Depression
- Red Flags
 - Age > 50 years or < 20 years
 - Neurologic symptoms

- Cauda Equina Syndrome
- Constant progressive pain
- Duration or lack of improvement > 1 month
- Insidious onset
- Prior history of cancer
- Unexplained weight loss
- Spine tenderness
- Fever
- Significant trauma
- Past medical history
 - Osteoporosis
 - Cancer
 - HIV
 - IV drugs use
 - Trauma
 - Osteoarthritis

Physical examination

In general, the purpose of physical examination is to identify features that suggest that further evaluation is indicated, rather than to make a primary diagnosis. The physical examination should include the following components:

- Inspection of back and posture
- Palpation/percussion of the spine paravertebral muscles, interspinous ligament and tenderness over sacroiliac joints often inflammatory spondylitis and tenderness over sciatic notch
- Neurologic exam: Including evaluation of the reflexes, strength, sensation, and gait. For patients suspected of having a radiculopathy, neurologic testing should focus on the L4, L5 and S1 nerve roots. Manoeuvres like Lasègue sign, Patrick sign and Bragard test are useful
- Non-organic signs: These signs are very useful for identified psychological component to a patient's pain. Normally this was observed when patients make spontaneous activity and present inconsistency motor and sensitivity disturbances (loss or hyperalgesia)
- Test for range of motion limitation for trunk flexion (Schöber test)
- Other: lymph node exam, check distal pulses

Diagnostic imaging approach for low back pain

To identify fractures or underlying systemic disease early use of imaging to evaluate low back pain is used. However, the usage of these diagnostic techniques is not associated with improved outcomes and could lead to invasive and unnecessary procedures.

In addition, it could be difficult to correlate the abnormal findings in images with symptoms reported by patients. For example, disc herniations are seen in 22 to 67 percent of asymptomatic adults and osteoarthritis correlates poorly with symptoms. Moreover, if the radiographic findings are related to clinical presentation, the magnitude of findings in images may not predict the clinical improvements.

There are three main types of imaging that can be used according to the clinical suspicion such as, plain radiography, computerized axial tomography and magnetic resonance imaging (MRI).

Indications for imaging

Although some guidelines suggest taking into account some findings on history or physical examination called “red flags”, the majority of patients will not require any kind of imaging, because 95 percent will recover after a treatment of four to six weeks.

These red flags, as mentioned above, are key to evaluate the possibility of serious systemic conditions, neurologic injury or fractures and would help for early imaging and initial treatment. There is controversial evidence to support their use, but the studies have shown that only a history of cancer and risk factors related to fractures increase the probability of abnormal findings on imaging.

The American College of Physicians (ACP) guidelines suggest the following recommendations to order diagnostic imaging:

1. A patient with signs or symptoms of cauda equina syndrome, significant neurologic symptoms and high level of suspicion for spinal infection should have emergent magnetic resonance imaging. Otherwise, in case of low suspicion the best option is a plain radiography plus erythrocyte sedimentation rate. The MRI is more sensitive for detecting spinal infection than a plain radiograph, 0.96 vs. 0.82, respectively. In addition, the MRI has a specificity of 0.92 while the plain film has a value of 0.57. Because of the lower sensitivity and specificity of plain film, it is recommended to combine the evaluation with erythrocyte sedimentation rate.
2. Patients with high risk of cancer should undergo a plain radiography plus erythrocyte sedimentation rate.
3. Patients with risk factors of vertebral compression fracture should have a plain film.
4. Other patients, for example those with low back pain without other features and low risk of cancer, progressive neurologic impairment or spinal infection, should have conservative treatment for four to six weeks. If there is not improvement after that trial, it could be considered to order a diagnostic imaging.

Treatment

Most people with acute low back pain improve within one to two months. In general, evidence for treatment of low back pain is confusing and contradictory. However, there are some clear points.

Non-pharmacological interventions

There are different types of adjunctive therapies oriented to relief and improve the clinical course of low back pain.

Exercise and physical therapy don't show improvement in most patients with acute pain, but in people with risk factors of chronic pain can be useful. In addition, avoiding bed rest and progressive return to work is recommended.

Education about causes, prognosis, poor value of images and recommendations in activity and work is very important

On the other hand, spinal manipulation and acupuncture have limited evidence in acute pain, but may improve chronic pain. Other interventions such as Yoga showed an improvement in chronic pain but it's not recommended in acute cases.

Laser therapy, ultrasound and shock wave therapy have insufficient and inconsistent evidence, as well as, heat and cold wraps applied on the surface. More over, the usage of percutaneous nerve stimulation (PENS), foot orthoses, acupressure, spa therapy, neuroreflexotherapy and cupping have some evidence in chronic back pain.

Pharmacological therapies

The goal of pharmacological treatment is the symptomatic relief in short time.

First line drug therapy is acetaminophen or nonsteroidal anti-inflammatory drugs. Despite they have not shown efficacy to reduce days of sickness, they have modest effect in short time relief. Furthermore, they are related to

produce adverse events, such as, kidney disease, upper gastrointestinal bleeding, especially anti - inflammatory drugs. Muscle relaxants can be used as second line but drowsiness and dizziness limit their use. In the same way, addition of relaxants to acetaminophen or anti -inflammatory drugs don't produce additional improvement.

Other medications such as, opioids, tramadol and antidepressants should be considered in patients without positive results with other first line pharmacological options. Herbal medicines such as, Devil's claw, white willow bark and topical capsaicin appear to be effective.

Finally, in selected patients, epidural steroid and non-steroid injections, facet joints, paravertebral points and intraligamentous injections may improve symptoms.

Take Home Message

- Low back pain is one of the most common complains and self-limited conditions in primary care patients.
- The purpose of physical examination is to identify features that suggest that further evaluation is indicated, rather than to make a primary diagnosis.
- The majority of patients will not require any kind of imaging, because 95 percent will recover after a treatment of four to six weeks.
- The studies have shown that only a history of cancer and risk factors related to fractures increase the probability of abnormal findings on imaging.
- There is controversial evidence about different types of adjunctive therapies oriented to relief and improve the clinical course of low back pain. In terms of pharmacological management is concerned, acetaminophen and nonsteroidal anti - inflammatory drugs are the first line therapies.

Original Abstract

<http://www.woncaeurope.org/content/2325-how-evaluate-and-effectively-treat-low-back-pain>

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