Acute Low Back Pain: Pharmacological Management

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Question
What is the best available evidence regarding pharmacological management for adults with acute low back pain?

Clinical Bottom Line
Acute low back pain (ALBP) is one of the leading causes of global disability which accounts for approximately 90% of all cases, often without a specific cause.¹ There is variation in the definition of ALBP ranging from pain that is less than 4 weeks to less than 12.¹ There is also a lack of consensus regarding the transition from ALBP to the sub-acute phase, however all guidelines define chronic low back pain as more than 12 weeks.¹ Most recommendations include manual therapies, patient education and advice to continue normal activity as well as the potential use of pharmacological treatment.¹ (Level 5)

- A systematic review aimed to assess international guidelines regarding pharmacological approaches to back pain management. The authors assessed nine international clinical practice guidelines recommendations on specific pharmacological agents for back pain management.¹ (Level 5)
  - All guidelines recommended non-steroidal anti-inflammatory drugs (NSAIDs), such as ibuprofen as the first line of treatment. Strong recommendations for NSAIDs were present in five clinical practice guidelines for ALBP. Short term use of NSAIDs at the lowest dose is recommended to reduce drug related harm such gastrointestinal, hepatic, cardiac or renal side effects. Other guidelines did not specify dose or how long the drug should be taken.
  - There is conflicting advice regarding skeletal muscle relaxants (SMR). The authors of the review noted that guidelines strongly recommended or strongly discouraged the use of SMRs such as cyclobenzaprine and tizanidine. American and Canadian guidelines included the use of SMR; however, SMRs are not recommended by the United Kingdom or the Danish guidelines.
  - There is conflicting literature regarding the effectiveness of acetaminophen (paracetamol). All guidelines but one (North American Spine Society) reviewed acetaminophen (paracetamol); three guidelines from Denmark, Belgium and the UK recommended against the use of this drug due to its ineffectiveness. American and Canadian guidelines stated that the evidence advice is inconclusive.
  - Strong pain pharmacological interventions such as opioids were considered for short term ALBP treatment in five guidelines only when other pharmacological and non-pharmacological pain reduction methods have failed. Three guidelines (UK; Denmark and Institute of Clinical Systems Improvement) recommended against the use of opioids. This is due to the risk of harm including drug dependence or long-term side effects which outweigh the benefits.
  - Other drugs such as atypical opioids (tramadol), anticonvulsive medication, antidepressants and oral...
steroids were not recommended in treating ALBP.

- All clinical practice guidelines included non-pharmacological approaches to managing ALBP in conjunction with pharmacological management strategies.

- A systematic review investigated the use non-opioid pharmacological agents including myorelaxants (also known as SMR), NSAIDs and acetaminophen (paracetamol) in management of ALBP. In this review, the authors defined ALBP as pain less than 12 weeks duration of the low back. The authors identified high quality RCTs with a relatively low risk of bias. The results indicated that NSAIDs were the most effective at relieving pain within the first week of injury. Myorelaxants were somewhat effective but not as effective as NSAIDs. The use of acetaminophen (paracetamol) was ineffective on its own but had some positive pain relief effects when combined in a drug regime with NSAIDs. The authors noted that many back injuries usually resolve on their own accord and that drug intervention is somewhat cautioned. However, compared to placebo controls, some pharmacological therapy in the short term may relieve ALBP. (Level 1)

- A systematic review aimed to examine the early use of opioid medication within the first two weeks of an ALBP presentation and its effect on the length of disability. The mean age of participants was 40 years and 70% of all participants were males. The review identified moderate-high quality cohort studies which indicated that early use of opioid increases the length of disability as reported by patients. Across the studies, the average length of disability was longer for opioid taking patients by 0.4 to 69.1 days. The authors conclude that the early use of opioids has been associated with increased disability. (Level 3)

- A systematic review aimed to explore the efficacy and safety for myorelaxants in the treatment of ALBP. The review included RCTs, conference proceedings and drug trial registrations. The authors identified low quality studies, and found trials mainly related to non-benzodiazepine antispasmodics, antispastic medication and benzodiazepines. Overall, the review identified there was low certainty evidence that non-benzodiazepine antispasmodic might reduce pain levels for ALBP within two weeks compared to the other SMR drug types. The results indicated that adverse events were noted for both non-benzodiazepine antispasmodic trials and antispastic medication compared to the adverse events for benzodiazepines. However, the differences were not clinically significant. The authors reported that there are international discrepancies within guidelines, and recommend caution if clinicians are considering myorelaxant treatment. (Level 1)

Characteristics of the Evidence
This summary is based on a structured search of the literature and selected evidence-based health care databases. The evidence included in this summary is from:

- A systematic review that included nine clinical guidelines.
- A systematic review of 18 RCTs, with 3,478 participants.
- A systematic review of six cohort studies with 178,130 participants.
- A systematic review of 31 trials, 35 published RCTs, 12 clinical trial registration and two conference abstracts, with 6,505 participants.

Best Practice Recommendations
1. Short term use of NSAIDs as the first line of treatment is recommended for ALBP. (Grade A)
2. Opioid based pain relief should only be used when all other pharmacological and non-pharmacological treatments have failed based on the risk of drug harm. (Grade A)
3. Acetaminophen (paracetamol) taken in conjunction NSAIDs maybe effective however taking acetaminophen is not recommended on its own. (Grade B)
4. There is not enough evidence to recommend for or against the use of atypical opioids (tramadol), anticonvulsive medication, antidepressants or oral steroids in treating ALBP. (Grade B)

References