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**Effectiveness of Treatments for Low Back Pain**

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**Abstract**

- Low back pain with or without radiculopathy symptoms is increasingly becoming a common complaint for patients. The purpose of this study is to evaluate the most effective treatment for patients experiencing low back pain with or without radiculopathy symptoms with the goal of pain reduction (elimination) and postoperative pain level. Review of the literature explores studies that discuss treatment options of surgical intervention or conservative treatment such as physical therapy. This information supplies health care providers with the tools to educate patients on treatment options and possible outcomes in hopes to offer the best treatment for the individual. Results show that patients can have pain reduction or relief and return to normal activity level in a shorter time frame with treatment of conventional methods versus surgical interventions. The findings indicate treatment alternatives that may not have been considered beneficial before. In addition, the findings may provide guidance to when a patient should be referred to a surgeon for treatment versus starting with physical therapy or other non-surgical treatment options. This information should help health care providers reduce a patient’s low back pain and improve their quality of life.

**Introduction**

- Chronic low back pain is a common complaint among adult patients as prevalence has increased from 3.9% in 1992 to 10.2% in 2006.  
- Even just two days per week of exercise therapy results in significant pain reduction and increased overall function (Rainville et al., 2002).  
- It is thought that spinal fusion is the gold standard surgical treatment option.  
- Patients often still have some continuation of pain along with additional risks associated with surgery such as infection and possible re-operation.  
- “Lumbar fusion has become the conservative intervention and exercises at relieving symptoms, improving function and return to work at 4-years” (Bros et al., 2010, p.1647).

**Literature Review**

- “Recent figures estimate that 7% to 14% of adults in the United States have some degree of chronic low back pain, and 2% to 3% of the population are totally disabled by back pain at any given time” (McCance, 2010, p. 492).

**Pathophysiology of Low Back Pain and Radiculopathy**

- Pain that lasts at least three months is usually referred to as chronic pain.  
- There are five mechanisms that have suggested for causing chronic pain;  
  1. Sensory change in the sensitivity of neurons  
  2. Regenerated peripheral nerves create spontaneous impulses  
  3. There could be a reorganization of nociceptive neurons  
  4. There could be a loss of pain inhibition at the spinal cord  
  5. Chemokines could be up regulated

- “Radiculopathies are created from damage to the spinal roots that emerge from the vertebral canal from mechanisms such as compression, infection, inflammation, retraction or direct trauma (McCance, 2010)”

**ALTERNATE TREATMENT OPTIONS**

- “For step 2 in low back pain treatment is using conservative methods such as physical therapy/exercise  
- Treatment results with two-day or three-day therapy were statistically similar, which represents a significant potential cost savings of 20% and decrease in work time low for patient.”

**Surgical Treatment Options**

- “Lumbar fusion has been considered the gold standard surgical treatment for chronic low back pain patients.”  
- A five year evaluation results post total disc replacement (TDR) versus lumbar fusion surgery for patients with chronic low back pain; Primary outcome assessment of ODI group versus 15% in the fusion group reported being totally pain free (Skodl et al., 2013).

**Comparison of Surgery Versus Non-Surgical Treatment Options**

- “1 week plus 2 weeks in the outpatient clinic at the study centers inserted by 2 weeks at home” (Bros et al., 2010, p.1643); to help patients realize that they could participate in activities of daily life without doing harm to their back.

- “Lumbar fusion patients reported a score of 44.1 ± 10.7 at baseline and 28.2 ± 10.5 at four years cognitive/exercise participants reported a score of 43.4 ± 11.1 at baseline and 27.0 ± 19.4 at four years (Bros et al., 2010).”

- “Lumbar disc degeneration; and conservative treatment options in patients with low back and lumbar radicular syndrome showed; two months post treatment, the operative group reported 5.680 ± 3.838 and the non-operative group reported 11.00 ± 3.638 on the Sciatica bother index. 18 month follow up, the operative group reported 3.620 ± 2.550 and non-operative group reported 6.500 ± 3.737 (Hadley et al., 2012).”

- “11 year follow up of three multicenter randomized controlled trials showed no statistically reportable differences in treatment options at long term follow up (Mannion, 2013).”

- “Significant improvement was shown throughout both groups with the exception of fear-avoidance beliefs and fear-avoidance distance with the fusion group and lower limb pain in the cognitive/exercise group (Bros et al., 2003).”

**Cost for surgery is significantly more than conservative treatment and does not appear to yield better results (Bros et al., 2010).**

- “Disc prosthesis vs. multidisciplinary rehabilitation data shows patients should be treated earlier than usual to reduce development of chronicity with degenerative results (Heft et al., 2012).”

- “Multidisciplinary rehabilitation should be attempted before disc replacement surgery becomes the treatment option (Hillen et al., 2012).”

**Discussion**

- Spin surgery - “efficacy in reducing back pain, associated leg pain and resulted in lowered disability.” (McCance, 2010).

**Applicability to Clinical Practice**

- Low back pain is a significant problem in healthcare today as it is the second most referred to a surgeon for treatment versus starting with physical therapy or other non-surgical treatment options. This information should help health care providers reduce a patient’s low back pain and improve their quality of life.

**References**


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