

Executive Summary

In order to investigate clinical effectiveness of injection therapy for low back pain, especially focusing on long-term effects, following studies were conducted: 1) Study on current practice in Korea including comparison of outcomes between injection group and non-injection group using Health Insurance Review & Assessment service (HIRA) claims database from 2006 to 2008 2) Systematic review of existing randomized controlled trials

1. Analysis on current status

Based on National Health Insurance claims database of HIRA from 2006 to 2008, the status of patients with back pain, the utilization of medical service of the patients, and comparisons in between injection group and non-injection group have been analyzed.

The results showed that the number of patients with back pain was increased from 1.9 million to 2.2 million between 2006 and 2008. The most frequently visited type of medical institution and specialty were clinic and osteopathic offices, respectively. This trend was the same for all three years.

Annual medical expenditure for patients with back pain was 528.9 billion won in 2006, 581.8 billion won in 2007 and 608.4 billion won in 2008. Even though the medical expense per person has increased from 260,000 won to 290,000 won, the medical expense in 2007 was the highest in view of inflation rate. Average period under treatment per patient was in a decreasing trend from 10 days to 8 days from 2006 to 2008.

The number of treated with injection therapy was increased by

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10.8-11.15% each year. When the number of those who received injection therapy per 100,000 normal people and the number per 100,000 patients with back pain, were considered, the number of patients with injection therapy was increased each year. The number of patients treated with injection therapy was increased with the patients' age. The most frequently visited type of medical institution, specialty and region were clinic, osteopathic office and Seoul, respectively. This trend was the same for all three years. The medical expenditure for injection therapy was 15.6 billion won in 2006, 17 billion won in 2007 and 19.1 billion won in 2008. It is approximately 3% of the total fee spent by patients with back pain each year.

The number of patients who were newly treated for back pain in 2006 was 880,000. The most frequently visited specialty and region were osteopathic office and Seoul, respectively. The average annual medical expense per new patient was 199,172 won and they received treatment for back pain for 6.6 days on average.

Among the total of 882,617 new patients with back pain, 7.1% (62,670) underwent injection therapy. The number of patients received injection therapy per 100,000 patients with back pain was the highest in Busan (15,759) and the lowest in Incheon (3,547). Such drastic difference, 4.4 times, in between the highest and the lowest group shows regional preferences of injection therapy. However, this study is limited in analyzing the reason behind such differences. Therefore, multi-axial analysis on medical resources use of patients with back pain is needed in future studies.

After excluding patients received surgery or opioid anesthesia within 6 month of diagnosis, the number of patients received injection therapy was 51,170 (5.8%) and the number of patients who did not received injection therapy was 815,199 (92.4%). When these two group's medical resources use for one year compared, 1.0% of the injection group and 0.3% of the non-injection group underwent surgical intervention regarding back pain. Average medical expense per patient was 137,798

wons for injection group and 54,725 won for non-injection group. The injection group was treated for 4.4 days, while the non-injection group received treatment for 2.0 days regarding back pain. The differences in medical use for the two groups can be explained by severity of pain, different treatment methods for different diagnosis and varying base line condition of different patients. However, this study is limited in adjusting these variables for further analysis of each group's medical use. Therefore, supplementary data should be included in the future study for more detailed analysis from various angles.

2. Systematic review

In order to establish systematic evidences on long-term efficacy of repeated injection therapy for low back pain, clinical trials where participants were followed up at least for 6-months have been systematically searched and included in the meta-analysis. Most of existing literature have studied efficacy of injection therapies by comparing one another or with placebo injection. There was only one study that was conducted for comparison of injection therapy with non-invasive conservative treatments.

When considering need for surgical intervention due to failure of injection therapy as the primary outcome, repeated epidural steroid injection did not show significant differences from any non-invasive treatments, placebo treatments, and injection treatments with other local anesthetic drugs or other similar treatments.

There were two studies that compared long term effects of intradiscal steroid injection with normal saline injections, where data were also available for evaluation in long-term surgical outcome. However, those two studies showed results of different direction. Six studies of long term pain control for epidural and facet joint injections showed similar

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tendency. Also, there were no significant differences in pain control after six or twelve months of injection therapy compared to the control groups. After twelve months of follow-up, pain control effect even decreased more in injection group.

Disability results showed similar patterns to those of the pain control. After six months, there were no significant differences between injection and control groups, and after 12 months, disability due to low back pain tended to be worse in injection group.

One of the studies presented significantly different results from the others. We considered this study as an influential point and eliminated from the analysis. When reanalyzed the data by including the study, the study had an influence on estimating results in change of disability significantly enough to switch the direction of results, and resulted in statistically significant heterogeneity across studies. Therefore, it is questionable whether to include this study in the meta-analysis for final assessment.