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**Клинические особенности пациентов с грыжей диска  
поясничного отдела позвоночника и лечение методами  
китайской медицины**

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## The Clinical Features of Patients With Lumbar Disc Herniation and Chinese Medicine Treatment

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### **Abstract (Russian):**

**Цель:** изучить клинические особенности пациентов с грыжей диска поясничного отдела позвоночника (ГПД), обсудить методы лечения ГПД в традиционной китайской медицине.

**Методы:** Группу составили 171 пациент с болью в нижней части спины (БНС) из реабилитационной клиники, возраст и пол пациентов были проанализированы с помощью программного обеспечения IBM SPSS 22. Для диагностики ГПД использовалась компьютерная томография (КТ). Сравнивались методы лечения ГПД, такие как небольшой игольчатый нож и традиционные методы.

**Результаты:** Средний возраст пациентов составил 41-42 года, наибольшее распространение в возрастной группе 30-39 лет, а большая часть ГПД локализовалась между L4/L5 межпозвонковыми дисками. ГПД в виде протрузии более характерна для мужчин и меньше для женщин, разница была статистически достоверной при  $p=0,048$  ( $p < 0,05$ ).

**Выводы:** Необходимо уделять большое внимание ГПД, особенно среди молодого населения. Маленький игольчатый нож менее травматичен для пациентов.

**Ключевые слова:** боль в нижней части спины, грыжа диска поясничного отдела позвоночника, малый игольчатый нож.

### **Abstract**

**Objective:** To study the clinical features of patients with lumbar disc herniation (LDH), discuss the Chinese medicine treatment for LDH.

**Methods:** 171 patients with low back pain (LBP) from rehabilitation clinic, were analyzed by IBM SPSS 22 software from different people of ages and sexes. The computerized tomography (CT) scan used to diagnose LDH. The treatment methods of LDH, such as small needle knife were compared.

**Results:** The average age of patients is between 41-42 years old, the most in the age group of 30-39 years old, and the most parts of LDH are L4/L5.

The protruded type of LDH is more in male patients and less in female patients, and the difference was statistically significant at  $p=0.048$  ( $p < 0.05$ ).

**Conclusion:** Considerable attention to LDH is needed, especially for young people population. The small needle knife has less trauma to patients.

**Keywords:** Low back pain, lumbar disc herniation, small needle knife.

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## **Introduction**

Low Back Pain (LBP) is a high impact condition that affects the adult population and nearly 80% of the population sustains an episode of LBP once during their lifetime (Zhang et al, 2018). The most common source is intervertebral degeneration leading to degenerative disc disease and lumbar disc herniation (LDH).

LDH is the compression of nerve roots due to the localized displacement of intervertebral disc tissue, and the hallmark of intervertebral disc herniation is pain. There are three types of pathological classification of LDH: disc protrusion type, disc extrusion type and disc sequestration type (Ma XL et al, 2015). Any of the three herniation types have the potential to cause pain and other symptoms.

In Hunan Province, China, the prevalence of lumbar disc herniation is 7.62%, and the incidence is highest in the 25-55 age range (Wang GJ. 2009). In the choice of treatment methods, 66.8% of patients chose Chinese traditional medical treatment methods, including massage, acupuncture, cupping and small needle knife. Only 7.7% of patients chose surgery (Liu YQ et al, 2017).

Among Chinese traditional medical treatment methods, the shape of the small needle knife is similar to that of an acupuncture needle, but the tip is tough, like a blade, and can be cut and released (Junchen Zhu. et al, 2020). The purpose of this article is to understand the clinical features of patients with LDH, discuss the Chinese traditional medical treatment for LDH.

## **Materials and Methods**

The subjects in this study were 171 patients, including 107 female patients and 64 male patients with low back pain. These patients come to the Rehabilitation Medicine Clinic of the First People's Hospital of Urumqi from January to June 2021. The computerized tomography (CT) scan used to diagnose lumbar disc degeneration and LDH. The statistical analysis used Excel software to input data, Statistical data processing was carried out using the IBM SPSS 22 program, and Pearson's chi-squared test was used to test the rate, and the difference was statistically significant at  $p < 0.05$ , results are expressed as means  $\pm$  SEM.

## **Results**

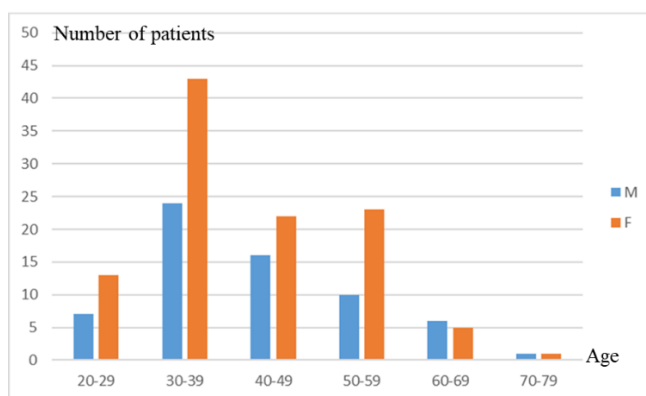
### **The age distribution of male and female patients**

Among 171 patients with low back pain, 64 male patients, accounting for 37.4% of the patients, and 107 female patients, accounting for 62.5% of the patients. The

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average age of male patients is  $42.5781 \pm 12.85$  (range 21 to 75 years), and the average age of female patients is  $41.7944 \pm 1.48$  (range 21 to 73 years). There is no statistically significant difference in average age between male and female patients.

As shown in Fig 1, the age distribution of male patients shows that there are 24 patients in the 30-39 year-old age group, accounting for 37.5%, 16 patients in the 40-49 year-old age group, accounting for 25%; The age distribution of female patients showed that 43 patients were 30-39 years old, accounting for 41.2%, 23 patients were 50-59 years old, accounting for 21.5%.



**Fig1. Age distribution of patients with low back pain**

Regardless of whether male patients or female patients, the prevalence is highest between the ages of 30-39, and patients aged 30-39 account for 78.7% of all patients.

### **CT scan results of patients with lumbar disc herniation**

As shown in Tab1, among 171 patients with LBP, 105 patients were diagnosed with LDH. Among 105 patients (41 males and 64 females), CT scan results showed that 70 patients with L4/L5 lumbar disc herniation, accounting for 66.7%.

**Table 1.** The location of lumbar disc prolapse in patients

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| location \ patients | L4 / L5 |      | L5 / S1 |      | L3 / L4 |      | L2 / L3 |     |
|---------------------|---------|------|---------|------|---------|------|---------|-----|
|                     | N       | %    | N       | %    | N       | %    | N       | %   |
| Male patients       | 31      | 75.6 | 18      | 43.9 | 10      | 24.4 | 0       | 0   |
| Female patients     | 39      | 60.9 | 28      | 43.8 | 15      | 23.3 | 6       | 9.4 |
| p                   | 0.120   |      | 0.988   |      | 0.911   |      |         |     |

Among 41 male patients, 31 patients with L4/L5 intervertebral disc herniation, accounting for 75.6%, 18 patients with L5/S1 disc herniation, accounting for 43.9%; Among 64 female patients, 39 patients with L4 /L5 intervertebral disc herniation, accounting for 60.9%, and 28 patients with L5/S1 intervertebral disc herniation, accounting for 43.8%; More than 50% of patients had two disc herniations.

### The protruded type of LDH in male and female patients

We collected CT imaging data of LDH patients, as show in Fig2, the are total of 105 LDH patients, including 41 male patients and 64 female patients. Table 2 lists the data and proportion of LDH in male and female patients, as well as the differences between male and female patients.



Fig2. Spinal imaging of lumbar disc herniation using CT

Among 41 male patients, 20 patients with protruded lumbar disc, the proportion is 48.78%; among the 64 female patients, there are 19 patients with protruded lumbar disc, accounting for 29.68%, the protruded type of LDH is more in male patients and less in female patients. The Pearson's chi-squared test was used to test the rate, and the difference was statistically significant at  $p=0.048$  ( $p<0.05$ ).

**Table 2.** The protruded lumbar disc in male and female patients

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|                | Male   | Female | P     |
|----------------|--------|--------|-------|
| Protruded type | 20     | 19     | 0.048 |
| Total patients | 41     | 64     |       |
| Rate           | 48.78% | 29.68% |       |

### Comparison of small needle knife, acupuncture and operation

In traditional Chinese medicine, doctors use a small needle knife to treat lumbar disc herniation. As shown in the Fig3, the needle knife has a diameter of 0.4 to 1.2 mm, a length of 10-15 cm, and a flat tip with a shape like a miniature Scale-like leaves.



**Fig 3.** The patients with LDH were treated with a small needle knife

The small needle knife penetrates the human skin with a needle and loses the local adhesion with a knife. We compared the treatment methods of small needle knife, acupuncture and surgery, the results are shown in Table 3.

**Table 3.** Differences of acupuncture, small needle knife and operation

|                | Acupuncture | Small needle knife | Operation         |
|----------------|-------------|--------------------|-------------------|
| Into the body  | Pierce      | Pierce             | Incision          |
| Effect on body | Stimulate   | Cutting.Separate   | Cutting.resection |
| Suture         | NO          | NO                 | YES               |

## Discussion

Wang Xiao-Jun, Yang Yan, Alenskaya T.L., Azaronak M.K., Nikalayeva A.G., Xuan Li-Zong (2021). The Clinical Features of Patients With Lumbar Disc Herniation and Chinese Medicine Treatment. *Health, Physical Culture and Sports*, 24 (4), pp. 74-82 (in English). URL: <http://journal.asu.ru/index.php/zosh>  
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This study analyzed the LBP prevalence of different age in rehabilitation clinic, the prevalence is highest between the ages of 30-39, and patients aged 30-39 account for 78.7% of all object.

Basic research shows that after the age of 30, the intervertebral disc will be in a degenerative state. In some special industries, such as airline flight attendants, show that the prevalence of lumbar intervertebral disc herniation is 8.6% for female flight attendants over 31 years old [Ke Mei. et al, 2014].

Our research data shows that in both male and female patients, L4/L5 is the first place where LDH is prominent and L5/S1 is the second place . Studies have shown that lower waist is the stress point for lumbar movement. From a biomechanical point of view, the intervertebral disc of L4/L5 and L5/S1 bears the greatest pressure [Michael. et al, 2016].

Our study showed that in male LDH patients the disc protrusion accounted for 43.9%, in female patients, disc protrusion accounted for only 29.68%, there is a significant statistical significance between the male and female. Lumbar disc degeneration was significantly more frequent in men. These results confirm the general perception that young men are more susceptible to disc degeneration than young women are, most likely due to increased mechanical stress and physical injury (Yi Xiang. et al, 2016).

## Conclusion

LDH is a common etiology in low back pain, our study found that the average age of patients is between 41-41 years old, and the most patients are in the age group of 30-39 years old. L4/L5 was the most prominent part of LDH, followed by L5/S1. CT scan showed that the protruded type of LDH is more in male patients and less in female patients. The Chinese traditional medicine has few side effects, the small needle knife is one of the commonly used treatment methods for LDH patients. LDH affects the work and life of patients and is an important public health issue. In the future, we need to pay more attention to the young people population. For comparison, the small needle knife has less trauma on patients.

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