

Clinical observation on 120 cases of lumbar disc herniation treated with Yaotongning capsule

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Abstract: This clinical observation aims to observe and analyze the effect of Yaotongning capsule in the treatment of lumbar disc herniation, and provide valuable guidance for clinical practice. A total of 120 patients who confirmed with lumbar disc herniation in our hospital from January 2016 to December 2018 were enrolled as research objects in this study. On the other hand, another 120 patients who were treated for lumbar disc herniation in our hospital during the same period were classified in the control group. General routine treatment mode was adopted for the control group, while Yaotongning capsule was given to the study group on the basis of general routine treatment. The therapeutic effect was observed and compared between the two groups. The overall treatment efficiency, VAS score, serum cytokine levels and quality of life were compared between the two groups. The results showed the study group exhibited significant improvement compared with control group, $p < 0.05$. The application of Yaotongning capsule can achieve markedly good results in treatment of lumbar disc herniation, which is worthy of popularization and application.

Keywords: Yaotongning capsule, lumbar disc herniation, therapeutic effect observation

INTRODUCTION

Lumbar disc herniation, as one of the most common diseases, which is mainly due to that the disc annulus fibrosus ruptures under the action of external factors, the nucleus pulposus tissue protrudes from the ruptured place (or prolapse) in the posterior or spinal canal, resulting in stimulation or compression of the adjacent spinal nerve roots (Wang *et al.*, 2016; Wei *et al.*, 2016; Ding and Lian, 2015), as well as clinical symptoms such as lumbar pain, numbness and pain in one or both lower limbs. The incidence of lumbar disc herniation is the highest at L4-L5 and L5-S1, which accounts for 95% cases (Ruan, 2016; Chen *et al.*, 2018).

Lumbar disc herniation (shown in fig. 1) affects patients' lives and work in varying degrees. The main treatment is medication. In this study, the efficiency of Yaotongning capsule in the treatment of lumbar disc herniation was observed.

Yaotongning capsule is a Chinese patent medicine name. Its ingredients include Angelica, Astragalus, Rehmannia Glutinosa, Coix seed, *Rhizoma corydalis* and *Davallia mariesii*. As a moisturizing agent, it can relieve swelling and pain, dissipate cold and evil, warm and activate meridians. It is mainly used to treat lumbar disc herniation, sciatica, lumbar muscle strain, lumbar fibrositis, rheumatoid arthritis pain caused by cold dampness resistance of meridians with symptoms of waist and leg pain, joint pain and limited limb activity (Mohammad *et al.*, 2018; Sun *et al.*, 2017).

MATERIALS AND METHODS

A total 240 patients who were treated in our hospital and for lumbar disc herniation from January 2016 to December 2018 (as shown in fig. 2) were enrolled as research objects. All selected patients had the right to know about this study and signed formal informed consent. The study was approved by the Hospital Ethics Association. All patients meet the diagnostic criteria for "lumbar disc herniation" in the "Diagnostic Efficacy Standard of TCM Syndrome" (Singh *et al.*, 2018), as shown in fig. 2. The patients were randomly divided into study group and control group, each containing 120 cases. The study group consisted of 65 male and 55 female patients aged between 45 and 70 (58.9 ± 3.1) years, with an average disease duration of (19.3 ± 1.2) months; the control group consisted of 68 male and 52 female patients aged between 42 and 68 (56.4 ± 3.6) years, with an average disease duration of (20.5 ± 1.6) months. There was no significant difference in general data between the two groups, $p > 0.05$.

The control group was given oral Kanggu zhizhengsheng pill (Baoji Huaxi Pharmaceutical Co., Ltd., SFDA approval number Z20043419), 3g each time, three times a day, combined with conventional lumbar massage therapy and traction for 4 weeks. During the treatment, the improvement of low back pain, sciatica, abnormal bowel movements was observed. On the basis of this, the study group was given oral Yaotongning Capsule (Department of Pharmacy, Affiliated Hospital of Changchun University of Chinese Medicine, Chang Health Medicine System Code (96) 1409), 6 capsules each time, three times a day for 4 consecutive weeks.

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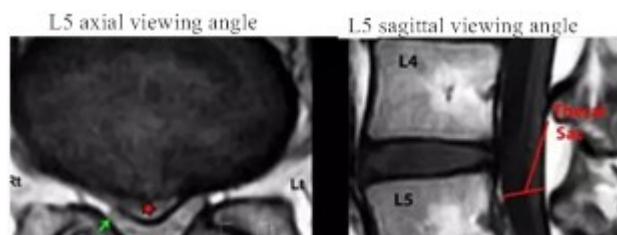


Fig. 1: Imaging examination of patients with lumbar disc herniation

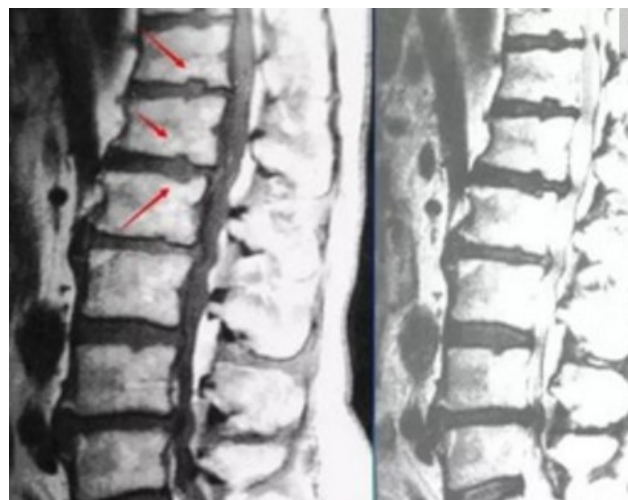


Fig. 2: Image of a patient with lumbar disc herniation



Fig. 3: Examination image after treatment

Observation indicators

The patient's treatment efficiency was evaluated according to new Chinese medicine guidelines on lumbar disc herniation, and evaluated by three criteria, including

significantly effective, effective and ineffective. If the patient consciously feels waist and leg pain disappears or basically disappears after treatment, the straight leg elevation test is negative, or close to 70° and the patient returns to normal work, then the treatment is significantly effective (Zhang *et al.*, 2017; Huang *et al.*, 2018). If clinical symptoms are obviously improved, activity is mildly limited, straight leg evaluation test result is better, and the patient can carry out lighter work after treatment, then the treatment is regarded effective. If there is no obvious difference after treatment compared with before treatment, and even the condition is aggravated, then the treatment is ineffective. Serum inflammatory cytokine indexes such as interleukin-8 (IL-8), interleukin-10 (IL-10) and tumor necrosis factor- α (TNF α) were measured by enzyme-linked immunosorbent assay (ELISA). The degree of pain in patients was evaluated using pain visual analogue scale (VAS) and quality of life of the two groups was evaluated using SF-36 scale.

STATISTICAL ANALYSIS

The statistical analysis software used was SPSS21.0. The measurement data were expressed by mean \pm standard deviation ($\bar{x} \pm s$), with t test was used for comparison between groups; count data was expressed by natural number (n) and percentage (%), with chi-square test for inter-group comparison. The difference was considered statistically significant when $p < 0.05$.

RESULTS

Comparison of treatment efficiency between the two groups

As shown in table 1, the study group has significantly higher overall treatment efficiency than the control group, $p < 0.05$.

Comparison of pain scores before and after treatment in both groups

As shown in table 2, the study group has significantly lower pain scores than the control group, $p < 0.05$.

Changes in peripheral blood inflammatory factors in the two groups

As shown in table 3, after treatment, the study group has significantly better improvement in all peripheral blood inflammatory factors than the control group, $p < 0.05$, which is statistically significant.

Comparison of quality of life between the two groups

As shown in table 4, the study group has significantly better quality of life than the control group, $p < 0.05$.

DISCUSSION

Lumbar disc herniation is a common disease with a high incidence. It is mainly caused by degenerative changes in various parts of the lumbar disc, such as nucleus

Table 1: Comparison of the overall treatment efficiency between the two groups [n (%)]

Group	Number of cases	Significantly effective	Effective	Ineffective	Overall efficiency
Study Group	120	84	31	5	115(95.83)
Control group	120	50	48	22	98(81.67)
X ²					8.52
p					<0.05

Table 2: Comparison of pain scores before and after treatment in both groups ($\bar{x} \pm s$)

Group	Number of cases	VAS score before treatment	VAS score after treatment
Study Group	120	7.3±0.3	1.8±0.6
Control group	120	7.2±0.6	4.2±0.9
t		0.92	8.35
p		>0.05	<0.05

Table 3: Changes in peripheral blood inflammatory factors in the two groups ($\bar{x} \pm s$)

Group		Study Group	Control group	t	p
IL-6(ng/ml)	Before treatment	190.3±2.2	190.4±2.7	0.60	>0.05
	After treatment	66.9±2.5	152.96±10.3	6.55	<0.05
IL-8(ng/ml)	Before treatment	212.67±3.2	213.9±4.0	0.22	>0.05
	After treatment	88.9±3.3	160.8±4.3	5.39	<0.05
CRP(mg/L)	Before treatment	5.1±1.2	5.4±1.1	0.82	>0.05
	After treatment	2.5±0.3	3.8±0.5	6.44	<0.05
TNF-α(ng/L)	Before treatment	166.8±2.1	168.7±2.3	0.10	>0.05
	After treatment	54.3±2.3	136.0±2.9	8.93	<0.05

Table 4: Comparison of quality of life indicators between the two groups ($\bar{x} \pm s$)

Group	Number of cases	Physiological function	Emotional function	Social function	General health status	Psychological function	Energy
Study Group	120	79.80±3.25	78.96±3.20	82.35±2.18	60.78±3.22	75.63±4.02	65.79±2.04
Control group	120	72.20±2.46	66.88±2.58	73.20±2.59	49.06±3.01	65.80±2.06	55.49±3.28
t		6.70	20.19	6.79	8.53	11.22	13.27
p		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

pulposus, as well as the annulus fibrosus and cartilage plate. Moreover, under the action of external force (Ye *et al.*, 2017), annulus fibrosus rupture is caused and the nucleus pulposus protrudes from the rupture to the posterior or spinal canal, resulting in stimulation or compression of the adjacent spinal nerve roots, forming lumbar pain. The patient's clinical symptoms are mainly manifested by numbness, pain, in one side or both lower limbs (Jayakumar *et al.*, 2019). The number of people with lumbar disc herniation is increasing. It is crucial to adopt a scientific and effective drug treatment mode to help improve patients' clinical symptoms.

Lumbar disc herniation falls in the scope of "lumbar and leg pain" in the perspective of traditional Chinese medicine. Extensive practical treatment experiences have shown that treatment of this disease with Yaotongning Capsule receives good results (Sarmast *et al.*, 2018; Maadawy *et al.*, 2018). The composition of Yaotongning capsule includes zaocys dhumnade, trogopteris, lumbrius, cornu cervi degelatinatum, meretrix meretrix, Astragalus and Achyranthes bidentata, Rhizoma

Corydalis, Rehmannia Glutinosa, Borneol and *Davallia mariesii*. The effect is to reduce swelling and pain, warm meridians, dissipate cold and evil. Yaotongning capsule can positively boost local blood circulation, improve waist nerve, muscle function and vascular state, produce good local inflammation elimination effect and at the same time excite the spinal nerve and the dominated muscle group, thus effectively regulating imbalanced vertebral body. Moreover, Yaotuitonging capsule can also significantly inhibit sciatic nerve pain response and create better therapeutic effect.

The results of this study indicates that after the study group exhibits significantly better performances in overall treatment efficiency, VAS score, serum cytokine level and quality of life than the control group, $p < 0.05$. This fully demonstrates that administration of Yaotongning capsule on the basis of basic treatment can better improve the symptoms of patients with lumbar disc herniation. At the same time, Yaotongning capsule has rapid onset, can reduce or avoid adverse reactions, which is more easily accepted by patients.

CONCLUSION

In summary, lumbar disc herniation will cause different degrees of impact on normal life and work, so it is crucial to take scientific and effective drug therapy to control and improve clinical symptoms. Yaotongning capsule is an effective therapeutic drug made of trogopterus dung, lumbricus, cornu cervi degelatinatum, meretrix meretrix, Astragalus and Achyranthes bidentata, which can promote blood circulation to remove blood stasis, dredge the meridians, relieve spasm and pain, clear dampness and promote diuresis. The modern pharmacological effects of this drug include anti-inflammation, analgesis, weakening the inflammatory response of nerve roots, reducing the degree of nerve root pain, maintaining nerve structure and function, inhibiting immune response and promoting re-absorption of the intervertebral disc to reduce intervertebral disc degeneration. Yaotongning capsule can be widely used in the treatment of patients with lumbar disc herniation, which demonstrates important application value.

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