Treatment of Lumbar Disc Herniation (LDH) with Conventional Physiotherapy Combined with Gentongping

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Abstract: Objective To observe the therapeutic effect and efficacy comparison of conventional physical therapy combined with oral Chinese medicine Gentongping granules on lumbar disc herniation. **Methods** The 179 patients with lumbar disc herniation treated in the Second Affiliated Hospital of Inner Mongolia Medical College in 2002 were divided into 54 cases of Conventional Physiotherapy Group, using lumbar automatic traction and computer intermediate frequency electrotherapy; 67 cases of Conventional Plus Vitamin Group, treated with conventional physiotherapy plus vitamin B_1 100mg, Vitamin B_{12} 500μg intramuscular injection; 58 cases of conventional physiotherapy combined with oral Gentongping granules treatment group (hereinafter referred to as Conventional Plus Chinese Medicine Group). **Results** The Conventional Plus Chinese Medicine Group had an excellent rate of 89%, with ≥50% pain relief rate of 93% at one-week. Half-a-year follow-up showed that 92% of local numbness in the affected limb of the patients was eliminated, which was significantly better than the other two groups. **Conclusion** Conventional physiotherapy combined with oral Gentongping granules can permanently improve the patient's nerve root pain and eliminate the local numbness in affected limbs.

Key words: Lumbar Disc Displacement; Administration, Oral Administration; Granules

0 Introduction

After comparing and observing the efficacy through group division, the author found that conventional physiotherapy combined with oral Gentongping granules, Chinese medicine combined with Western medicine has obvious advantages in the treatment of patients with Lumbar Disc Herniation (LDH), such as efficacy, shortening the treatment time and eliminating local numbness in affected limbs and other aspects.

1 Objects and Methods

Design: Randomized controlled observation with patients as the study subjects.
Unit: Physical Rehabilitation Department of a municipal hospital.
Participants: The study subjects were LDH patients admitted to the Second Affiliated Hospital of Inner Mongolia Medical College in 2002. Inclusion Criteria:① All cases were confirmed by the clinical examination, CT or MRI. ② The patients who did not undergo the systematic treatment in 2002 were screened in the study. Exclusion Criteria:All spinal tuberculosis, tumors and other diseases are excluded. 179 patients who met the above criteria were randomly divided into 3 groups. In 54 patients of the Conventional Physiotherapy Group, including 35 males and 19

females, with the average age being (38±7) years old and the average LDH score being (62.3±7.8) points, there were 21 cases with their herniation at L_{4-5}, 19 at L_5-S_1 and 14 at $L_{4\sim5}$ and L_5-S_1. In 67 patients of the Conventional Plus Vitamin Group, including 42 males and 25 females, with the average age being（36±6) years old and the average LDH score being（58.4±6.7) points, there were 24 cases with their herniation at L_{4-5}, 22 at L_5-S_1, 15 at L_{4-5} and L_5-S_1 and 6 at L_{3-4} and L_{4-5}. In 58 patients of the conventional Chinese medicine group, including 37 males and 21 females, with the average age being (38±7) years old and the average LDH score being (60.8±7.2) points, there were 21 cases with their herniation at L_{4-5}, 18 at L_5-S_1, 13 at L_{4-5} and L_5-S_1 and 6 at L_{3-4} and L_{4-5}. The above score was evaluated clinically according to the percentage method.

Designer, executor, and appraiser: The designer, data collector and appraiser of the study is the author who has received training.

Methods: The conventional physical therapy group adopted lumbar automatic traction and computer intermediate frequency electrotherapy. Guangzhou ATA-IID Automatic Traction Bed was used for lumbar prone automatic traction. When patients were lying prone on the automatic traction bed, with their chest and hips fixed with chest strap and pelvic girdle respectively, the traction bed was started to perform traction with the weight suitable for patients' body weight, 30min per time, 1 time/d for 30 consecutive times. For intermediate frequency electrotherapy, the electrodes were placed on both sides of the spine of affected intervertebral space or the waist and the lower limbs of affected sides with the tolerance dose, 20 min per time, 1 time/d for 30 consecutive times. The Conventional Plus Vitamin Group was treated with conventional physiotherapy plus vitamin B_1 100mg, vitamin B_{12} 500μg intramuscular injection (iv), once per day for 30 consecutive days. The Conventional Plus Chinese Medicine Group was treated with conventional physiotherapy combined with oral Chinese medicine Gentongping granules, 10g/time, 3 times/d, even for 30 days.

Functional Evaluation: ① The pain intensity of patients was evaluated with the Visual Analogous Scale (VAS) every week [1]. The patients in each group were evaluated 1 month after the first treatment by using the percentile LDH Efficacy Evaluation Standard with excellent being >90 points; good 75-90 points; acceptable 50~74 points; poor <50 points. The elimination of local numbness in the affected limb was observed during the half-a-year follow-up. ②Pain relief rate (%)=[(VAS before treatment-VAS after treatment)/VAS before treatment]x100%.

Main Outcome Measures: ① VAS pain assessment changes. ② LDH evaluation results. ③ Follow-up results of the local numbness.of patients.

Statistical Analysis: Statistical analysis (x^2test) was performed by the author with SAS statistical software and $P<0.05$ was considered statistically significant.

2 Results

2.1 Analysis of the Number of Participants 179 patients were enrolled in the study, and the same 179 patients were included in the result analysis without dropout.

2.2 VAS Pain Assessment Changes See Table 1. Statistical analysis among groups on the Pain

Relief Rate of >50% every week found that after 1 week of treatment, the pain relief effect in the Conventional Physiotherapy Group and the Conventional Plus Vitamin Group was not as good as that in the Conventional Plus Chinese Medicine Group (x^2=26.8, P<0.01). After 2 weeks of treatment, there was no significant difference between the Conventional Physiotherapy Group and the Conventional Plus Vitamin Group while the Conventional Plus Chinese Medicine Group therapy was better than the other two groups (x^2=36.2, P<0.01).

Table 1 Pain Relief after Treatment in Each Group (n)

Group Category	n	After 1 week of Treatment			
		Relief ≥80%	Relief <80% And >50%	Relief 30%-50%	Relief <30%
The Conventional Physiotherapy Group	54	0	16	30	8
The Conventional Plus Vitamin Group	67	4	18	38	7
The Conventional Plus Chinese Medicine Group	58	10	32	13	3
Group Category	n	After 2 weeks of Treatment			
		Relief ≥80%	Relief <80% And >50%	Relief 30%-50%	Relief <30%
The Conventional Physiotherapy Group	54	6	16	29	3
The Conventional Plus Vitamin Group	67	12	20	32	3
The Conventional Plus Chinese Medicine Group	58	24	29	5	0

2.3 LDH Assessment Results There are 13 excellent cases and 19 good cases in the Conventional Physiotherapy Group, with the excellent and good rate being 59%. The Conventional Plus Vitamin Group has 15 excellent cases and 24 good cases, with the excellent and good rate being 58%. The Conventional Plus Chinese Medicine Group has 23 excellent cases and 28 good cases were, with the excellent and good rate being 88%. Wherein, the Conventional Plus Chinese Medicine Group had the best treatment effect (x^2=56.4, P<0.025).

2.4 For the follow-up results of patients' local numbness, there were 32 cases with local numbness in 45 followed-up cases in the Conventional Physiotherapy Group, accounting for 71%; 38 cases with local numbness in 53 followed-up cases in the Conventional Plus Vitamin Group, accounting for 72%; 5 cases with local numbness in 48 followed-up cases in the Conventional Plus Chinese Medicine Group, accounting for 10%. There is no statistical significance in numbness elimination of affected limbs for the Conventional Physiotherapy Group and the Conventional Plus Vitamin Group. However, the Conventional Plus Chinese Medicine Group's treatment of numbness elimination is apparently superior to the former two treatments with significant statistical difference (x^2=45.2, P<0.05).

3 Discussion

Lumbar automatic traction means, through lumbar prone traction, to restore physiological

curvature, widen the intervertebral space, and relieve spasm and filling of surrounding ligaments and soft tissues, which can effectively reduce the pressure in intervertebral space so as to restore the herniated lumbar discs and eliminate the mechanical compression of nerve roots. Meanwhile, the intermediate frequency electrotherapy was adopted. Various parameters such as waveform and frequency could be changed multiple times in a unit time, which can act on deeper tissues, increase the permeability of cell membranes, and improve the local blood circulation, and after directly acting on neuromuscular, can cause special form of physiological contraction to alternately activate muscle fibers, making atrophic or weak muscles contract, tensioned muscles relax, and could promote the recovery of nerve function, thus playing an excellent therapeutic role. The above treatments should be combined with oral Gentongping granules since the main ingredients of Gentongping granules are radix paeoniae alba, puerarin, Hyssopus officinalis, flos carthami, olibanum and myrrh, etc., which has a strong effect of relaxing muscles and promoting the blood circulation, so as to remove wind and cold, relieve pain and eliminate numbness. For patients undergoing the above-mentioned conventional physiotherapy treatment, although the pain in waist and lower extremities disappeared, and the straight leg elevation test turned negative and all lumbar scoliosis improved, there are always numb areas of different sizes in the affected limbs, which make the patients unable to achieve satisfactory results. However, after taking oral Gentongping granules, the satisfactory results are achieved.

Conclusion: The author believes that the use of integrated Chinese and Western medicine treatment of ABC is safe, perfect in efficacy, simple and inexpensive, and can permanently improve the symptoms of low back and leg pain, and eliminate the local numbness of affected limbs,which is an ideal and relatively perfect rehabilitation measure.

4 References

1 Compiled by the Department of Medical and Political Affairs, Ministry of Health of the People's Republic of China. Chinese Rehabilitation Medicine Diagnosis and Treatment Standards (Part 2) [M]. Beijing: Huaxia Publishing House, 1999:3

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