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SOME FACTORS RELATED TO TREATMENT OUTCOMES OF LUMBAR HIP SYNDROME USING ELECTRO-ACUPUNCTURE COMBINED WITH MASSAGE AND NGUYEN VAN HUONG'S PHYSICAL EXERCISES

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ABSTRACT

Objectives: *To describe some factors related to the outcomes of treating lumbar hip syndrome using electro-acupuncture combined with massage and Nguyen Van Huong's exercises.*

Subjects and methods: *A cross-sectional interventional study was conducted on 30 patients with lumbar hip syndrome caused by lumbar disc herniation. Patients were treated with electro-acupuncture combined with massage and Nguyen Van Huong's exercises at the Traditional Medicine Clinic, Hanoi Heart Hospital, from July 2021 to September 2022. Treatment outcomes were evaluated based on changes in pain (VAS), lumbar spine flexibility (Lasegue's test), and quality of life (Oswestry Disability Index), classified into four levels: good, fair, moderate, and poor.*

Results: *Patients with a disease duration of less than 6 months and single-level disc herniation had significantly better treatment outcomes compared to those with disease duration of 6 months or more and multi-level herniation ($p < 0.05$). No significant associations were found between treatment outcomes and factors such as age, gender, occupation, or degree of disc herniation.*

Conclusions: *Duration of disease and number of herniated disc levels are related to treatment outcomes in patients with lumbar hip syndrome due to disc herniation.*

Keywords: Electro-acupuncture, massage and acupres sure, Nguyen Van Huong's exercises, lumbar hip syndrome.

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1. INTRODUCTIONS

Lumbar hip syndrome (LHS) is a common clinical condition with an increasing prevalence due to various factors in modern life. According to Ho Huu Luong (2020), in Vietnam, about 80% of patients with LHS are of working age and the condition is often caused by disc herniation [3]. In the United States in 2005, the cost of treating disc herniation was estimated at $86 billion, comparable to the cost of treating diabetes. LHS affects both men and women, mainly during working age, and is a major cause of work disability in people under 45, impacting quality of life and creating a burden for families and society [7]. In traditional medicine, LHS is categorized under "Bi Syndrome" (in Vietnamese is Chung ti) with terms like low back pain and hip pain.

Many treatment methods are available, such as physical therapy (traction, heat therapy, paraffin wax), non-steroidal anti-inflammatory drugs, and traditional medicine techniques. According to the FDA, about 9-12 million Americans are treated for lumbar pain with acupuncture each year, costing approximately $500 million. Acupuncture and massage are considered effective due to their simplicity, rapid pain relief, and ability to restore spinal mobility. In Vietnam, Nguyen Van Huong's exercise system plays a role in treatment, prevention, and health enhancement. These exercises are simple, safe, and effective, and can be self-practiced at home [4].

While many studies focus on the effectiveness of non-drug treatments for LHS, few have examined factors that influence treatment outcomes. Therefore, this study aimed to describe some factors related to treatment outcomes of lumbar hip syndrome using electro-acupuncture, massage, and Nguyen Van Huong's exercises.

2. SUBJECTS AND METHODS

2.1. Subjects

30 patients diagnosed with lumbar hip syndrome due to posterior lumbar disc herniation were

recruited. They were treated as outpatients at the Traditional Medicine Clinic, Hanoi Heart Hospital, from July 2021 to September 2022.

Patients were excluded if they had asymptomatic disc herniation, systemic infection or toxicity, were physically unfit to perform Nguyen Van Huong's exercises, had severe chronic comorbidities or trauma, experienced mild pain (VAS < 3) or severe pain (VAS > 7), did not comply with the treatment protocol, or did not consent to participate in the study.

2.2. Methods

- Design: cross-sectional, interventional study

- Sampling: convenience sampling of patients diagnosed with lumbar hip syndrome due to posterior lumbar disc herniation.

- Diagnosis: lumbar hip syndrome caused by posterior disc herniation was diagnosed based on Saporta's criteria [3] and confirmed by MRI showing posterior herniation of the lumbar intervertebral disc.

- Treatment methods:

+ Electro-acupuncture: using standard acupoint protocols by the Ministry of Health [1], including Ashi points, Jiaji (L3-S1), Dachangshu, Huantiao, Yinmen, Yanglingquan, Chengfu, Chengshan, Kunlun. Tonifying technique at Shenshu, Ganshu; neutral technique at Weizhong.

+ Massage and acupressure: following the Ministry's technical procedures [1]: rubbing, circular stroking, linear pressing, deep kneading, grasping, and acupressure at Ashi, lumbar Jiaji, Shenshu, and Dachangshu.

+ Nguyen Van Huong's physical exercises [4]: Aimed at reducing stiffness, especially spinal extension movements, promoting nucleus pulposus movement forward, releasing nerve root compression. The set included:

* Relaxation: lying on the back, inhaling while arching the neck or pelvis, then exhaling slowly and relaxing.

* Bridge pose: supine position, supporting with head, elbows, and heels, lifting the body while inhaling, then exhaling while lowering.

* Boat pose: prone, raising head and legs while inhaling, pulling arms backward, then lowering and exhaling.

* Cobra pose: prone, arms beside the waist, pushing up into a backbend while inhaling, then lowering and exhaling.

* Back extension while standing: standing, hands clasped behind, pulling backward while inhaling and arching back, then returning to neutral.

Each treatment session lasted 30 minutes per technique, performed once daily over 20 days.

- Evaluation criteria: factors assessed included age, gender, occupation, disease duration, number and severity of disc herniation levels (based on MRI).

- Treatment outcomes were classified based on: VAS pain score, Lumbar extension (Lasegue test), Oswestry Disability Index [6].

- Grading scale:

+ Good: ≥ 80% improvement.

+ Fair: 65-80% improvement.

+ Moderate: 50-65% improvement.

+ Poor: < 50% improvement.

- Ethics: patients gave informed consent. Confidentiality was maintained.

- Data analysis: using SPSS 20.0, standard biomedical statistical methods.

3. RESULTS

Table 1. Association between age, gender, occupation, disease duration and treatment outcomes (n = 30)

Factor		Results		OR (CI95%)	p
		Good-Fair	Moderate-Poor		
Age	Age < 60	11 (91.7%)	1 (8.3%)	8.8 (0.9-83.3)	> 0.05
	Age ≥ 60	10 (55.6%)	8 (44.4%)		
Gender	Male	9 (81.8%)	2 (18.2%)	2.6 (0.4-15.7)	> 0.05
	Female	12 (63.2%)	7 (36.8%)		

Factor		Results		OR (CI95%)	p
		Good-Fair	Moderate-Poor		
Occupation	Manual labor	12 (66.7%)	3 (33.3%)	0.7 (0.1-3.4)	> 0.05
	Mental labor	9 (75.0%)	6 (25.0%)		
Disease duration	< 6 months	12 (92.3%)	1 (7.7%)	10.6 (1.1-101.3)	< 0.05
	≥ 6 months	9 (52.9%)	8 (47.1%)		

There was no statistically significant difference in good-to-fair treatment outcomes between patients under 60 years of age, male patients, and manual laborers compared to those aged ≥ 60, female patients, and intellectual workers, respectively, with odds ratios (ORs) of 8.8, 2.6, and 0.7; and 95% confidence intervals (CI95%) of 0.9-83.3, 0.4-15.7, and 0.1-3.4 (all p-values > 0.05).

In contrast, patients with a disease duration of less than 6 months had significantly better treatment outcomes, being 10.6 times more likely to improve compared to those with a duration of ≥ 6 months (OR = 10.6; 95% CI: 1.1-101.3; p < 0.05).

Table 2. Association between the number and severity of disc herniation levels and treament outcomes (n = 30)

Factor		Results		OR (CI95%)	p
		Good-Fair	Moderate-Poor		
Number of herniated levels	Single-level herniation	14 (93.3%)	1 (6.7%)	16 (1.6-154.6)	< 0.05
	Multi-level herniation	7 (46.7%)	8 (53.3%)		
Severity of disc herniation	Bulging/protrusion	8 (80.0%)	2 (20.0%)	2.1 (0.3-13.0)	> 0.05
	Herniation	13 (65.0%)	7 (35.0%)		

Patients with single-level disc herniation had a significantly higher rate of good-to-fair treatment outcomes (93.3%) compared to those with multi-level disc herniation (46.7%), with a statistically significant difference (p < 0.05, OR = 16, 95% CI: 1.6-154.6).

Patients with disc bulging or protrusion had a higher rate of good-to-fair outcomes (80.0%) compared to those with herniated disc (65.0%); however, the difference was not statistically significant (p > 0.05, OR = 2.1, 95% CI: 0.3-13.0).

4. DISCUSSIONS

4.1. Association between age, gender, occupation, and disease duration with treatment outcomes

- Age factor: patients under 60 years old had a higher rate of good to fair outcomes (91.7%) compared to those aged 60 and above (55.6%). However, the odds ratio (OR) did not reach statistical significance, possibly due to the small sample size. Therefore, a larger sample is needed to better assess the relationship between age and treatment outcomes.

- Gender factor: although many studies have investigated treatment outcomes of lumbar disc herniation (LDH), there is limited evidence on gender-related differences. A review by Strömqvist F et al. involving 301 LDH patients (165 male) who underwent surgery at the Department of Orthopedics, Lund University Hospital from 2000 to 2005 showed statistically significant gender differences that were clinically relevant. However, the return-to-work rate and patient satisfaction did not differ significantly between men and women [9]. In our study, male patients had a higher rate of good to fair outcomes (81.8%) compared to females (63.2%), but the difference was not statistically significant (p > 0.05; OR = 2.6; 95% CI: 0.4-15.7).

- Occupational factor: lumbar disc herniation can cause disability due to nerve root compression. A retrospective study by Ahsan M.K. et al. (2013) [5] evaluated the association between occupation

and LDH in 200 LDH patients and 200 controls matched for age, gender, and residence. The results showed a statistically significant association between heavy physical labor and LDH. In our study, the rate of good to fair outcomes among manual laborers (66.7%) was slightly lower than in intellectual workers (75.0%), but the difference was not statistically significant ($p > 0.05$; OR = 0.7; 95% CI: 0.1-3.4).

- Disease duration: in patients with newly diagnosed lumbar hip syndrome due to LDH, symptoms are often intense, but the musculoskeletal structures have not yet sustained long-term microtrauma or ligament damage, allowing for better recovery. Early detection and conservative treatment can lead to favorable outcomes and reduce the need for surgery, as irreversible changes (e.g., inflammation and adhesion around the disc) have not yet occurred. In our study, patients with a disease duration under 6 months had significantly better outcomes (92.3%) compared to those with a duration of 6 months or more (52.9%), with a statistically significant difference ($p < 0.05$; OR = 10.6; 95% CI: 1.1-101.3). This finding emphasizes the importance of early recognition, timely treatment, and preventive care to reduce recurrence.

A study by Kika Konstantinou et al. (2018) on prognosis in primary care among 609 patients found that longer pain duration was independently associated with poorer improvement (OR = 0.41; 95% CI: 0.19-0.9) [8].

4.2. Association between the number and severity of herniated discs on MRI with treatment outcomes

Number of herniated levels: table 2 shows that patients with single-level LDH had a higher rate of good to fair outcomes (93.3%) compared to those with multi-level LDH (46.7%). This difference was statistically significant ($p < 0.05$; OR = 16; 95% CI: 1.6-154.6), suggesting that fewer herniated levels are associated with better treatment outcomes.

Severity of herniation: patients with disc bulging or protrusion had a higher rate of good to fair outcomes (80.0%) than those with full herniation (65.0%). However, this difference was not statistically significant ($p > 0.05$; OR = 2.1; 95% CI: 0.3-13.0). In other words, the severity of disc herniation was not significantly related to treatment outcomes.

5. CONCLUSIONS

In this study of 30 patients with lumbar hip syndrome due to posterior lumbar disc herniation:

- Patients with disease duration under 6 months and single-level herniation had significantly better treatment outcomes ($p < 0.05$).

- No significant associations were found between age, gender, occupation, or severity of herniation and treatment results.

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