

Physiotherapy And Dry Needling in Cervical Disc Prolapse

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Abstract:

Physiotherapy and dry needling safely manage cervical disc prolapse. They reduce muscle spasms and relieve nerve pressure without surgery. Physiotherapy restores movement through gentle exercises and posture correction. Dry needling uses thin needles to relax tight muscles and boost blood flow. The combined approach (physiotherapy and dry needling) addresses the structural and biomechanical issues of cervical disc prolapse. The current study aimed to find effectiveness of this combined approach results in better functional outcomes and higher satisfaction scores compared to utilizing either treatment alone. This was quasi-experimental study conducted among 168 patients attending at Dhaka Pain, Physiotherapy & Rehabilitation Center (DPRC) hospital for treatment. All patients were divided into two separate intervention group and outcome was measured by Chi-square test. Excellent improvement was found thirteen times higher among patients who were given physiotherapy along with dry needling than patients were given physiotherapy only and the same scenario was seen in case of very good improvement. Not satisfactory improvement was none who were given physiotherapy along with dry needling. The effectiveness of intervention was statistically significant. More center based gold standard randomized clinical trial can be conducted in order to get more accurate result.

keywords: physiotherapy; dry needling; cervical disc prolapse

Introduction

Dry needling is a technique where a thin filiform needle is inserted into trigger points – taut bands of muscle that can contribute to pain. In the case of bulging discs, dry needling can target tight muscles that may be pulling on the spine and aggravating the disc. Physiotherapy and dry needling work synergistically to address different aspects of condition. Physiotherapy strengthens and stretches the larger muscle groups, while dry needling precisely targets specific trigger points for pain relief. Physiotherapist will evaluate your symptoms, medical history, and perform a physical examination. Based on the assessment, a personalized plan will be created, incorporating physiotherapy techniques and potentially dry needling. Cervical pain, or neck pain, can be defined as that unpleasant sensory and emotional experience associated with actual or potential tissue damage that affects the cervical region.¹⁻² It may range from the suboccipital line to the level of the spine of the scapula.¹⁻² Therefore, this condition is one of the main causes of disability worldwide, with a prevalence above 30%.³⁻⁴ Usually, neck pain is nonspecific. This way, it is not attributable to fractures, trauma, or any

other specific recognizable pathology such as infectious, vascular, or oncological conditions.

Methods

This was quasi-experimental study conducted among 128 patients attending at Dhaka Pain, Physiotherapy & Rehabilitation Center (DPRC) hospital for treatment. All patients were divided into two separate intervention group and outcome was measured by Chi-square test. First of all careful history taking was carried out followed by documents checking and physical examination was done and investigation was done according to patients need. Rapport building and consent taking were ensured. Detail procedure of the study was explained and confidentiality was maintained throughout the study. Statistical Package for Social Sciences version 22.0 was used to data analysis. Improvement was divided into five categories as like excellent, very good, good, satisfactory and not satisfactory considering pain reduction and functional outcome.

Results

Age group (in years)	Physiotherapy and Platelet-Rich Plasma (PRP) group	Physiotherapy group
	Frequency(Percentage)	Frequency(Percentage)
≤20	9(4.6)	3(1.5)
21-40	39(19.9)	50(25.5)
41-60	29(14.8)	34(17.3)
>60	21(10.7)	11(5.6)
Total	98(50.0)	98(50.0)

Table 1: Age distribution of the subjects.

Nearly half of the patients in both group represented from 21-40 years followed by 29.6%-34.6% from 41-60 years and 11.2%-21.4% from >60 years respectively.

Gender	Physiotherapy and Platelet-Rich Plasma (PRP) group	Physiotherapy group
	Frequency (Percentage)	Frequency (Percentage)
Male	53(27.0)	75(38.3)
Female	45(23.0)	23(11.7)
Total	98(50.0)	98(50.0)

Table 2: Gender distribution of the subjects.

Male and female distribution among physiotherapy and Platelet-Rich Plasma (PRP) group were 54% and 46% whereas in physiotherapy group it was 76.6% and 23.4%.

Occupation	Physiotherapy and Platelet-Rich Plasma (PRP) group	Physiotherapy group
	Frequency (Percentage)	Frequency (Percentage)
Day labor	7(3.6)	6(3.1)
Housewife	50(25.5)	28(14.3)
Service	22(11.2)	29(14.8)
Student	11(5.6)	8(4.1)
Business	4(2.0)	10(5.1)
Others	4(2.0)	17(8.7)
Total	98(50.0)	98(50.0)

Table 3: Occupation distribution of the subjects

In case of occupation, housewife, service and student were dominant.

Marital status	Physiotherapy and Platelet-Rich Plasma (PRP) group	Physiotherapy group
	Frequency (Percentage)	Frequency (Percentage)
Single	11(5.6)	8(4.1)
Married	87(44.4)	90(45.9)
Total	98(50.0)	98(50.0)

Table 4: Marital status of the subjects.

Most of the patients was married.

Marital status	Physiotherapy and Platelet-Rich Plasma (PRP) group	Physiotherapy group
	Frequency (Percentage)	Frequency (Percentage)
Single	11(5.6)	8(4.1)
Married	87(44.4)	90(45.9)
Total	98(50.0)	98(50.0)

Table 5: Effect of holistic approach (Physiotherapy and Platelet-Rich Plasma) in case of frozen shoulder

Excellent improvement was found twenty two times higher among patients who were given physiotherapy along with Platelet-Rich Plasma than patients were given physiotherapy only and the same scenario was seen in case of very good improvement. Not satisfactory improvement

was none who were given physiotherapy along with Platelet-Rich Plasma. The effectiveness of intervention was statistically significant ($p=0.001<0.05$).

Intervention	Improvement					Total	Chi-square value	p value
	Excellent	Very good	Good	Satisfactory	Not satisfactory			
	n (%)	n (%)	n (%)	n (%)	n (%)			
Physiotherapy and Platelet-Rich Plasma (PRP) group	43(21.9)	27(13.8)	21(10.7)	7(3.6)	0(0.0)	98(50.0)	103.082	0.001
Physiotherapy	0(0.0)	6(3.1)	29(14.8)	50(25.5)	13(6.6)	98(50.0)		
Total	43(21.9)	33(16.8)	50(25.5)	57(29.1)	13(6.6)	196(100.0)		

Discussion

Disc prolapse in the cervical spine, a common cause of neck pain and discomfort, occurs when the cushion-like discs between the vertebrae protrude out of their normal position. This condition can lead to nerve root compression, resulting in pain, numbness, or weakness in the neck, shoulders, arms, and even hands. Physiotherapy plays a crucial role in the management and rehabilitation of this condition, offering a non-surgical approach to alleviate symptoms and improve quality of life. Excellent improvement was found thirteen times higher among patients who were given physiotherapy along with dry needling than patients were given physiotherapy only and the same scenario was seen in case of very good improvement. Not satisfactory improvement was none who were given physiotherapy along with dry needling. The effectiveness of intervention was statistically significant. In regard to physical therapy in the management of neck pain, the effect of conventional treatments is limited. Electrotherapy modalities (transcutaneous electrical nerve stimulation) could improve symptoms in chronic neck pain, but the evidence in this regard is not conclusive⁵, and passive mobilization or manipulative therapy is no better than an exercise program.⁶ Neck Pain is one of the main causes of disability worldwide, and it is necessary to promote new strategies of therapeutic approach in the treatment of chronic pain. Dry needling is defined as an invasive physiotherapy technique used in the treatment of neuromusculoskeletal disorders.⁷ Studies indicate a female predominance in terms of the distribution by sex of neck pain, and in the age range of 35-49 years⁸, especially from the age of 45.⁹ Typically, research indicates that the risk of neck pain is linked to physical and psychosocial factors, and may be related to lack of movement, sustained postures, and office work.¹⁰⁻¹¹ In general, it highlights the relationship of the treatment proposals of the trials with therapeutic exercise, and this reinforces the need to direct physiotherapy to a relationship between passive techniques and active movement. Exercise has positive effects on pain and functionality, and it should be oriented according to the interests and individual goals of the patient, and could be combined with instrumental techniques.

Conclusion

Physiotherapy offers a comprehensive approach to managing cervical disc prolapse, focusing on relieving symptoms, restoring function, and educating patients on long-term spine health. The study concluded that effectiveness of intervention (physiotherapy and dry needling) was statistically significant in case of cervical disc prolapse. More center

based gold standard randomized clinical trial can be conducted in order to get more accurate result.

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