ISSN: 0976-3031

Available Online at http://www.recentscientific.com

CODEN: IJRSFP (USA)

International Journal of Recent Scientific Research
Vol. 10, Issue, 03(A), pp. 31177-31179, March, 2019

International Journal of Recent Scientific Research

DOI: 10.24327/IJRSR

Research Article

A COMPARATIVE ANALYSIS OF EFFICACY OF KINESIO TAPING VERSUS CONVENTIONAL THERAPY IN BELLS PALSY BY USING HOUSE -BRACKMANN GRADING SYSTEM

Jyoti Sharma*, Shahin Naz Jamali and Shiva Koteshwara Rao

Galgotias University, Greater Noida

DOI: http://dx.doi.org/10.24327/ijrsr.2019.1003.3207

ARTICLE INFO

Article History:
Received 06th December, 2018
Received in revised form 14th January, 2019
Accepted 23rd February, 2019
Published online 28th March, 2019

Key Words:

Bell's Palsy; Kinesio Taping; House Brackmann Grading System

ABSTRACT

Bell's Palsy is Upward and outward movement of the eye when an attempt is made to close the eyes. Bells phenomenon is also known as the palpebral oculogyric reflex. Kinesio Taping is a relatively new technique, it is proposed to normalise muscular tone, increased range of motion, increases endurance and improve functional movement. It also provides a constant pull or shear force to the skin. House- Brackmann Grading System is used to measure facial weakness, eyebrow Lift, eyeclouser, asymmetry, synkinesis, movement of mouth, spasm and contracture. Purpose of study is to compare the impact of kinesio taping versus conventional therapy in Bell's palsy patients.

Copyright © Jyoti Sharma, Shahin Naz Jamali and Shiva Koteshwara Rao, 2019, this is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution and reproduction in any medium, provided the original work is properly cited.

INTRODUCTION

The term Bells' Palsy is defined as an idiopathic, acute and unilateral paresis or paralysis of the face which may be partial or complete occurring with equal frequencies on right and left sides of the face. The major cause of Bell's Palsy is idiopathic, accounting for 50% of all cases. Other few suggested causes are exposure to cold, middle ear infections, dental and ENT surgeries and traumatic [1]. The problems faced in acute phase of Bell's palsy include difficulty in closing the affected side eye, facial deviation to the unaffected side, difficulty in drinking, eating and speaking along with psychological problems and facial appearance is the main concern in any phase of Bell's palsy. Facial palsy is classified according to House and Brackmann score into 6 grades, where grade 1 is normal, grade 2 has slight dysfunction, grade 3 has moderate dysfunction, grade 4 has moderate to severe dysfunction, grade 5 has severe dysfunction and grade 6 has total paralysis [2].

Kinesio Taping

Kinesiology taping (KT) is a therapeutic tool and has become increasingly popular within the sporting arena. KT is not only used for sporting injuries but for a variety of other conditions. It was developed by Japanaese Chiropractor Dr. Kenzo Kase in the 1970's with the intention to alleviate pain and improve the healing in soft tissues. There are many proposed benefits to KT, including: proprioceptive facilitation; reduced muscle fatigue; muscle facilitation; reduced delayed-onset muscle soreness; pain inhibition; enhanced healing, such as reducing oedema, and improvement of lymphatic drainage and blood flow [3].

Electrical Stimulation

Idiopathic peripheral facial paralysis or Bell's palsy is the most frequent cause of facial paralysis, and occurs in 15-30 persons per 100,000 per year. In Mexico, according to the Ministry of Health there were 785,551 cases for the year 2007. This illness occurs without specific causes in individuals regardless of age and in both sexes; however, its incidence is higher around 40 years of age or over 65 years of age [4]. Treatments for this pathology are pharmacologic and physiotherapeutic, from which just the pharmacological forms of treatment have systematically shown better results when compared with controls or other treatments. In contrast, the physiotherapeutic treatments like electro-stimulation (ES), despite of their actual common use are still controversial, and in many cases not recommended or show no positive results. In addition, there are a few random and controlled studies that test the efficacy or not of ES [5]. Those uncontrolled reports, aside from their lack of scientific strictness show low or no therapeutic capacity at all; one of them even shows the worsening of facial functioning when electrotherapy is applied. In this regard, the last systematic review specifically focused on electrotherapy

**Corresponding author:* Jyoti Sharma
Galgotias University, Greater Noida

concluded that this treatment does not contribute benefits for patients with acute Bell's paralysis, but does so in chronic patients providing there is no denervation and there is persistence of facial muscular activity. Given that today is still practiced the electro-stimulation as a treatment of Bell's paralysis, this work is carried out a systematic review of the literature published on the subject. For a better understanding by the reader, it deals with general information about the pathology and the common form of electrotherapy used [6].

Need of the Study

House –Brackmann grading system is one of the tools used in facial nerve function in bells palsy patients. The main purpose of study is to show the efficacy of Kinesio taping over conventional therapy management of bells palsy with the help of better outcome measure House-Brackmann grading system.

MATERIALS AND METHODS

This is an Experimental comparative study carried out on 40 subjects. The subjects were selected on the basis of certain criteria as mentioned

Inclusion Criteria

- ✓ Acute, sub acute, chronic Bell's palsy
- ✓ Age group :10 – 50 years
- ✓ LMN Lesion
- ✓ Non traumatic cases
- ✓ No other neurological deficit

Exclusion Criteria

- ✓ Post surgical cases
- ✓ UMN lesion
- ✓ Skin infections and skin allergies
- ✓ Open wounds
- ✓ Non co-operatve patients
- ✓ Bilateral bell's palsy

Protocol

Group A received therapeutic intervention using kinesio taping followed by active and passive facial exercises 30 mins twice a week.

Group B received therapeutic intervention using conventional method of electrical stimulation (surged faradic and intermittant galvanic currents (50-100Hz)) 15 mins duration followed by active and passive facial exercises for daily 45 mins per day 6 days a week for 4 weeks.

Group A and B subjects were explained the condition, taught exercises and given advices about care required.

Stastical Analysis

In the study, pre-test and post-test values will be recorded. The data collected will be analysed with paired t-test.

RESULTS

Forty patients with bell's palsy were divided into two groups by simple random method. They were first assessed with HOUSE-BRACKMANN grading scale and were treated for 4 weeks. Statistical analysis done to compare the improvement with in the groups by paired 't' test.

PAIRED 't' TEST

Group –A

Paired samples statistics is shown in table 1. For 19 degrees of freedom (df) at 5% level of significance, the tabled 't' value is 14.33 (Table 2). Hence significant results were found.

Table 1 Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre test	4.200	20	1.1517	0.2575
	Post test	1.750	20	0.8507	0.1902

Table 2 Paired Samples Test

	Paired Differences			T	df	p-value
	Mean	Std. Deviation	Std. Error Mean			
Paired t-test for Pre-Test and Post Test	2.4500	0.7592	0.1698	14.433	19	0.001%

Group B

For 19 degrees of freedom(df) at 5% level of significance ,the tabled 't' value is 12.457 (Table 3 & 4). Hence significant results obtained.

Table 3 Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre test	4.450	20	0.9987	0.2233
	Post test	3.050	20	0.8870	0.1983

Table 4 Paired Samples Test

	Paired Differences			t-value	df	p-value
	Mean	Std. Deviation	Std. Error Mean			
Paired t-test for Pre-Test and Post Test	1.4000	0.5026	0.1124	12.457	19	0.001%

The patients with bell's palsy was measured by HOUSE-BRACKMANN grading scale, the statistical analysis was done by using paired't' test. For paired 't' test at 5% level of significance both the groups showed significant improvement but group-A shown better improvement.

DISCUSSION

On the basis of analysis of result the alternate hypothesis stating that Kinesio taping protocol/Technique is more effective than Conventional treatment protocol in subjects with Bell's palsy can be accepted & null hypothesis can be rejected [7].

Although both Kinesio taping protocol/technique and Conventional treatment protocol were effective for functional retraining but subjects in group A showed better functional recovery than group B in terms of facial symmetry, & ability to perform functional activities such as chewing, balloon blowing & speech. But taping protocol being more sequential and systematic showed better results. Also the intricacy of movement that can be achieved by the facial muscles should preclude the use of maximum effort, gross exercises, where motor units other than those targeted are recruited due to overflow [8].

Basically taping helps to retrain paralyzed facial muscles by maintaining symmetry and facilitating paralyzed muscles,

thereby preventing over activity of normal muscles and acts as a stabilizing mechanism by promoting desired symmetrical movement pattern that needs to be repetitively reinforced before it will be learned. Taping protocol is a problem solving approach to treatment using selective motor training to facilitate symmetrical movement and control undesired gross motor activity.

Taping protocol is based on the principles of Neuro Muscular Retraining (NMR), Neurophysiology and Biomechanics. It states that weak or paralyzed muscle can be reinforced or facilitated through irradiation and temporal & spatial summation [9].

The principle of Biomechanics explains the vectors responsible to perform a movement in facial region, which needs to be balanced to optimize the muscle function in desired direction thereby preventing asymmetry.

Taping Protocol Utilizes all of the above Principles and Serve the Main Purpose that are

- ✓ Preventing asymmetry
- ✓ Preventing over activity/ over pull of paralyzed muscle
- ✓ Enhance facilitation
- ✓ Reinforce movement in graded fashion
- ✓ Maximize functional use of affected muscles by incorporating functional activities.

The conventional therapy involves facial exercises, Facial massage and passive stimulation. It does not encourages functional reeducation of correct movement patterns which is the most basic aspect of the therapeutic process and lay the necessary foundation for learning the selective patterns to improve motor function. The Conventional Therapy due to this lacks the specificity. Also it does not encourage functional reeducation using correct motor pattern. This results in residual asymmetry (due to faulty motor pattern) [8].

Hence it can be interpreted that functional taping protocol is more specific and effective than conventional Therapy.

CONCLUSION

Kinesio taping is more effective over conventional treatment for functional retraining in subjects with Bells palsy. Hence the alternative hypothesis can be accepted and null hypothesis can be rejected.

Limitations and Suggestions

- ✓ Small sample size
- ✓ Less duration of study
- ✓ This study can be done with other good outcome measures
- ✓ This study can be done with other forms of facial palsies
- ✓ This study can be done with longer duration

References

1. Cederwall E, Olsen MF, Hanner P, Fogdestam I. Evaluation of a physiotherapeutic treatment intervention in “Bell’s” facial palsy. Physiotherapy Theory Pract. 2006; 22(1): 43-52.
2. Toffola D, Bossi D, Buonocore M, Montomli C, Petrucci L, Alfonsi E. Usefulness of BFB/EMG in facial palsy rehabilitation. Disabil. Rehabil. 2005; 27(14): 809-815.
3. Bulstrode NW, Harrison DH. The phenomenon of the late recovered Bell’s palsy: treatment options to improve facial symmetry. Plast. Reconstr. Surg. 2005; 115(6): 1466-1471.
4. Brach JS, Vanswearingen JM, Lenert J, *et al*. Facial neuromuscular retraining for oral synkinesis. Plast. Reconstruc. Surg. 1997; 99: 1922-1933.
5. Cronin GW, Steenerson RL. The effectiveness of neuromuscular facial retraining combined with electromyography in facial paralysis rehabilitation. Otol-Head Neck Surg. 2003; 128: 534-538.
6. Segal B, Zompa I, Danys I, *et al*. Symmetry and synkinesis during rehabilitation of unilateral facial paralysis. J. Otolaryngol. 1995; 24:143- 148.
7. Van Swearingen JM, Brach JS. Changes in facial movement and synkinesis with facial neuromuscular reeducation. Plast. Reconstruc. Surg. 2003; 111(7): 2370- 2375.
8. Palmieri NF. Idiopathic facial paralysis: mechanism, diagnosis and conservative management. Chiro. Technique. 1990; 182-187.
9. Krukowska J. Analysis of physiotherapy outcome in patients with Bell’s peripheral facial nerve palsy. Otolaryngol. Pol. 2003; 57(1): 143-145.

How to cite this article:

Jyoti Sharma, Shahin Naz Jamali and Shiva Koteshwara Rao., 2019, A Comparative Analysis of Efficacy of Kinesio Taping Versus Conventional Therapy in Bells Palsy by Using House -Brackmann Grading System. *Int J Recent Sci Res.* 10(03), pp. 31177-31179. DOI: http://dx.doi.org/10.24327/ijrsr.2019.1003.3207

****