Original Article

Role of physiotherapy in rehabilitation of facial muscles in facial palsy due to hemorrhagic stroke

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Objective: The objective of this study was to determine the role of physiotherapy in rehabilitation of facial muscles to relieve spasticity of facial muscles due to hemorrhagic stroke.

Methodology: The study was conducted at the Department of Medicine, Jinnah Hospital, Lahore, Pakistan and included 50 patients spasticity of facial muscles due to hemorrhagic stroke.

Results: Out of 50 patients, 3 (6%) were in grade I, 22 (44%) patients in grade II, 18 (36%) in grade III, 5 (10%) in grade IV and 2 (4%) were in grade V of spasticity. Massage, electrical muscular stimulus (EMS) and KOBAT techniques was given three times a week With therapy spasticity grades improved.

Conclusion: Physiotherapy has a major role in facial palsy, if started earlier. Exercises such as massage and manual therapy help to gain the strength in muscles of facial expression, which are effected after hemorrhagic stroke. (Rawal Med J 2014;39:389-391).

Key words: Facial palsy, stroke, hemorrhagic stroke.

INTRODUCTION

Facial palsy is characterized by paralysis of the lower half of one side of the face due to damage of upper motor neurons of the facial nerve.[1] It affects the all the muscles supplied by the facial nerve.[2] With facial palsy, lower part of one side of the face is usually affected.[3] In hemorrhagic stroke, physiotherapy starts when hemorrhage stops and hematoma clears.[4,5] Neuromuscular retraining, massage and Kabat techniques of rehabilitation are integral part of physical therapy treatment for spastic muscles due to facial palsy.[6] Neuromuscular retaining is used to facilitate symmetrical movement and control undesired gross motor activity.[7] During Kabat, therapist facilitates the voluntary contraction of the impaired muscles by applying a global stretching then resistance to the entire muscular section.[8]

Electro stimulation (e-stimulation, ES) appeared to speed recovery.[9] A systematic review concluded that facial exercise therapy was very effective for facial palsy.[10] Feedback training in combination with a structured rehabilitation program was efficacious for facial nerve paresis.[11] A study showed efficacy of pulsatile electrical current facilitated partial reinnervation in patients with chronic facial paralysis.[12] Physiotherapy significantly decreased facial muscles spasticity in patient with facial palsy.[13,14] The aim of this study was to determine the role of physiotherapy to relieve spasticity of facial muscles due to hemorrhagic stroke.

METHODOLOGY

The study was conducted at the Department of Medicine, Jinnah Hospital, Lahore, Pakistan and included 50 patients with facial paralysis due to hemorrhagic stroke. Patients with facial nerve paralysis due to infection or malignancy were excluded from the study. Informed Consent was taken from all patients.

Physiotherapy treatment such as massage, electrical muscular stimulus (EMS) and KOBAT techniques was given three times a week. Patients were assessed after three weeks on the basis of signs and symptoms and by modified ASHWORD'S scale. Patients were interviewed the patients and by assessing the spasticity. Using SPSS v.17 the data were analyzed.

RESULTS

Out of 50 patients, 28% were female and 72% were male. 24 (48%) patients had right sided facial palsy whereas 26 (52%) had left sided. Spasticity grade was IV and V in most patients (Table 1)

Table 1. Frequency of grade of spasticity before treatment.

	Number	Percent
Grade I	0	0
Grade II	1	2.0
Grade III	11	22.0
Grade IV	19	38.0
Grade V	19	38.0
Total	**50**	**100.0**

Table 2. Frequency of grade of spasticity after treatment.

	Number	Percent
Grade I	3	6
Grade II	22	44
Grade III	18	36
Grade IV	5	10
Grade V	2	4
Total	**50**	**100.0**

Spasticity was in grade II in 44%, in grade III in 36%, in grade IV in 10% in grade V in 4%, after treatment (Table 2).

DISCUSSION

Our study showed that physiotherapy management improved the facial muscles after facial palsy. It also showed the efficacy of massage, Kabat techniques and different exercises. It has been recommended to use heat therapy like hot packs and infra red for facial muscles prior to electrical stimulation, massage and exercises.[15] The conclusion of a systematic review was that facial exercise therapy was very effective for facial palsy.[10] There is evidence that feedback training and rehabilitation program is a clinically successful treatment option for patients with facial nerve paresis.

Active exercises especially in front of mirror improve facial muscles function.[16] A study concluded that ES appeared to speed up the recovery,[9] some suggest use of ES for its interference with re innervations and also due to its cost.[17] Further-more it was found that ES of muscles increased muscle neutrophin-4 that stimulates sprouting of axons and muscle re innervations and early use of ES might maintain motor function in nerve injury and might improve functional recovery.[18]

It is evident from the literature that efficacy of different physical modalities in rehabilitation of facial muscles is controversial.[19] Besides, it was mentioned that several physical and therapeutic modalities, including exercises and massage were recommended in treatment of facial palsy but there are very few clinical trial to support their effectiveness.[19] One should keep in mind that there is a chance of spontaneous recovery without any treatment and many factors contribute in prognosis of facial palsy.[20]

CONCLUSION

Physiotherapy improved spasticity considerably. Exercises such as massage and manual therapy help to gain the strength in muscles of facial expression, which are affected after hemorrhagic stroke.

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Conception and design: Maryam Ghazanaffar
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Conflict of Interest: None declared
Rec. Date: Sep 3, 2014 Accept Date: Oct 15, 2014

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