Research Article

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ROLE OF STROKE UNIT CARE WITH PANCHAKARMA IN THE MANAGEMENT OF STROKE: AN OBSERVATIONAL CASE SERIES

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ABSTRACT
The prevalence of stroke in India ranges from 40 - 270 per 100 000 population. Stroke patients who receive stroke unit care are more likely to get better relief than conventional care. Stroke unit care doesn't include Ayurvedic treatment in their protocol but it is common for stroke patient to seek help of alternative medicine especially Ayurvedic panchakarma therapies. The present study is an observational case series on stroke patients who received treatment at stroke unit care. The present study was planned to assess the role of stroke unit care along with panchakarma in the management of stroke. Total 15 stable stroke patients were observed for 14 days, who received internal modern medication, physiotherapy and speech and language therapy along with panchakarma. Total two assessments were carried out. First assessment was taken on the first day of starting panchakarma therapy along with standard stroke unit care. Second assessment was carried out after 14 days of first assessment. A criterion of assessment was based on the scoring of National Institutes of Health Stroke Scale (NIH SS) and Stroke Specific Quality of Life Scale (SS-QOL); Paired't' test was used for statistical evaluation. Stroke unit care with panchakarma has provided 63.49 % relief ($P < 0.001$) on NIH SS and 77.6 % relief ($P < 0.001$) on SS QOL. Maximum number of patients (53.33 % and 40 %) got moderate improvement on NIH SS and SS QOL respectively. Stroke unit care with panchakarma seems to be beneficial and better option in the management of stroke.
Keywords: Panchakarma, stroke, NIH SS, SS QOL, stroke unit care

INTRODUCTION

The prevalence of stroke in India ranges from 40-270 per 100 000 population. Approximately 12 % of all strokes occur in the population less than 40 years of age. India will face an enormous socioeconomic burden to meet the costs of rehabilitation of stroke victims because the population is now surviving beyond the peak years (age 55 - 65) for the risk of stroke.[1] There is good evidence from multiple, randomized controlled trials revealed that stroke is best managed in stroke units. The number of deaths and dependency were avoided by treating patients with stroke unit care. The best form of treatment for stroke that emerged over last several decades is stroke unit care.[2] Stroke patients who receive a package of organized inpatient (stroke unit) care are more likely to survive, return home and regain independence than those who receive conventional care in general wards. Generally stroke unit contains a core multidisciplinary team of medical, nursing, physiotherapy, occupational therapy, speech and language therapy staff and social workers.[3] These stroke units doesn't include Ayurvedic treatment or other alternative medicine in their protocol. One survey study revealed that, mean duration of hospital stay for stroke patients treated in stroke clinic was 19 days while the same for outstation patients was 7 days. Maximum number of patients treated at stroke clinic had sought the help of alternative forms of medicine. More than 90 % of patients after leaving hospital had sought alternative medicine. The form of alternative medicine sought by majority is Ayurveda.[4] Panchakarma is one of the important treatment modality of Ayurveda. Panchakarma literally means five procedures, vaman (therapeutic emesis), virechan (purgation), asthapan vasti (enema using medicated decoction), anuvasan vasti (enema using medicated oil) and shiro virechan / nasya (nasal administration of medicines). Along with this five major procedures there are various other allied therapies like snehan (oleation), swedan (fomentation) etc; are also collectively comes under panchakarma. Panchakarma has no adverse effects and it is very useful in treating neurological diseases as well as paralysis.[5] By considering all the above facts the present study was planned to assess the efficacy of stroke unit care along with panchakarma therapy in the management of stroke patients.

Aim and Objective

To assess the role of stroke unit care along with panchakarma therapy in the management of stroke

MATERIALS AND METHODS

Study Design

An observational case series

Selection of the Patients

All patients fulfilling the inclusion criteria were selected from the IPD of Parul Sevashram Hospital, Vadodara, Gujarat, India irrespective of caste, religion and economic status with their written consent.

Inclusion Criteria

Admitted patients whose general condition was stable and having clinical stroke diagnosis (both ischemic and intra cerebral hemorrhage) were included.

Exclusion Criteria

Patients with reduced consciousness, unconscious, having severe co morbidity, head injury, space occupying lesion and those who need intensive care unit management were excluded from the study. Catheterized, those who are on tube feeding or intra venous fluid therapy were excluded.

Written consent was taken from each patient willing to participate before the start of the study. Patients were free to withdraw from the study at any time without giving any reason. A detailed proforma was prepared incorporating Ayurvedic as well as modern points. Total 15 patients were registered in the present study and all of them have completed the course of treatment without any drop outs. No adverse effects were observed during treatment.

Intervention

All of the patients received the modern medicine, physiotherapy, language and speech therapy (selected patients only) and panchakarma. Under modern management anticoagulants, antiplatelet medicines, statins, antihypertensives and hypoglycemic were used according to the necessity. Acute cases were admitted and received intensive care unit management. When the patient gets stabilized, physiotherapy and panchakarma were started along with internal modern medicine. No internal Ayurvedic medicines were prescribed. Procedures like, udwartanam (powder massage), sarvanga abhyanga and bashpa sweda (full body oil massage with steam), choorna pinda sweda (full body massage with bolus prepared by herbal powders), patra pinda sweda (full body massage with bolus prepared by leaves of herbs), nasya (introducing liquid medicine through the nostrils) and anuvasana / matra vasti (oil enema) were done under panchakarma therapy. The type of treatment was determined by the condition of the patient, natural body composition of the patient and the stage of the stroke. Total intervention was flexible and planned according to the individual needs of the patient.

Assessment

Total two assessments were carried out. First assessment was taken on the first day of starting panchakarma therapy along with conventional modern medicine, physiotherapy, language and speech therapy. Second assessment was carried out after 14 days of first assessment. A criterion of assessment was based on the scoring of National Institutes of Health Stroke Scale (NIH SS) and Stroke Specific Quality of Life Scale (SS-QOL). Most recent studies used the NIH SS to assess baseline stroke severity. The NIH SS is a 15-item clinical deficit scale that was first described in 1989. The NIH SS assesses levels of consciousness, gaze, vision, facial palsy, arm and leg strength, limb ataxia, sensory loss, neglect, dysarthria and aphasia[6]. The SS-QOL is a patient-centered outcome measure intended to provide an assessment of health-related quality of life specific to patients with stroke. It is a self-report scale containing 49 items in 12 domains and subscales which include: energy, upper extremity function, work / productivity, mood, self-care, social roles, family roles, vision, language, thinking and personality. Items are rated on a 5-point likert scale. Higher scores indicate better functioning[7].

Statistical Analysis

Statistical analysis was done by using "student's paired t-test". The information gathered on the basis of observations was subjected to statistical analysis in terms of mean difference, standard deviation, standard error and paired't' test were carried out. Significance level was kept at < 0.05.

Overall Effect of Therapy

Overall effect of therapy was calculated by taking the percentage of relief (base line score – second assessment score / base line score × 100 for NIH SS and second assessment score – base line score / second assessment score × 100 for SS QOL) based on the total scores of NIH SS and SS QOL scales separately on each patient and categorized as no improvement (≤ 25 %), mild (> 25 % - ≤ 50 %), moderate (> 50 % - ≤ 75 %) and marked improvement (> 75 %).

RESULTS AND DISCUSSION

Total 15 patients were included in the present study. Maximum number of the patients belongs to 51-60 years of age group and lower middle class. Maximum patients having duration of illness less than one month and addictions like smoking, tobacco chewing was observed in 60 % of the patients (Table 1). On NIH SS, maximum relief was noticed in items like, 'facial palsy (82.5 %)', 'level of consciousness, LOC questions and commands (78.7 %)', 'extinction and inattention (65 %)', 'best language' and 'dysarthria (64.5 %)'(Table 2). After 14 days completion of treatment on total score of NIH SS, 63.49 % relief was observed ($P < 0.001$) (Table 4). Maximum number of patients (53.33 %) got moderate improvement (> 50 % - ≤ 75 %) on NIH SS (Table 5). On SS-QOL, maximum relief was noticed in items like, 'upper extremity function (64.84 %)', 'work / productivity (59.87 %)', 'energy (55.67 %)' and 'self care (54.15 %)' (Table 3). After 14 days completion of treatment on total score of SS QOL, 77.6 % relief was observed ($P < 0.001$) (Table 4). Maximum number of patients (40 %) got moderate improvement (> 50 % - ≤ 75 %) on SS QOL (Table 5). According to Ayurveda there are 80 vata disorders (neurological, musculoskeletal) and stroke is one of them. The treatment of stroke according to Ayurveda is divided into three phases. Those are purification, pacification and restoration. The treatment procedures are determined by many factors including age, gender, duration of stroke, presence of other diseases, body composition of the patient with regard to vata, pitta and kapha, and the climate[8]. Selected patients who are stable (not catheterized, not on tube feeding and having full consciousness) were included for panchakarma in present study. Sarvanga abhyanga provides nourishment to the dhatus (tissues). Massage gives strength to the muscles; relaxes the stiff muscles, and increases the blood flow and metabolism. After abhyanga, swedana in steam chamber or pinda sweda was done. These procedures are found to be pain relieving, muscle relaxing, activating the local metabolic process, increasing local blood flow, and thus increasing the absorption of sneha (oil) through the skin[9]. Relief in items like, upper extremity function, improvement in work / productivity and self care etc; may be due to the effects of sarvang abhyanga, bashpa sweda, pinda sweda and udwartana procedures. Improvement in energy may be due to matra vasti.

Table 1: Demographic Details

Description	Number (%)
Total number of cases	15 (100)
Number of selected cases	15 (100)
Number of excluded cases	0 (0)
Age (years)	
31-40	1 (6.67)
41-50	5 (33.3)
51-60	6 (40)
61-70	3 (20)
Gender	
Male	9 (60)
Female	6 (40)
Religion	
Hindu	13 (86.67)
Muslim	2 (13.33)
Socio economic status	
Lower middle class	8 (53.33)
Middle class	7 (46.67)
Side involved	
Right hemiplegia	6 (40)
Left hemiplegia	9 (60)
Involvement of face	
With facial palsy	3 (20)
Without facial palsy	12 (80)
Duration of illness	
Up to 1 month	8 (53.33)
1 – 6 months	4 (26.67)
6 months to 1 year	1 (6.67)
More than 1 year	2 (13.33)
Addiction	
Smoking	6 (40)
Tobacco chewing	2 (13.33)
Smoking and Tobacco chewing	1 (6.67)

Table 2: Effect of therapy on individual questions of NIH SS (After treatment)

S. No	BT*	AT**	M. Diff	% of Relief	SD***	SE****	't' Value	P Value
1	1.27	0.27	1	78.7	1.41	0.37	2.74	<0.05
2	0	0	0	0	0	0	0	>0.05
3	0	0	0	0	0	0	0	>0.05
4	0.4	0.07	0.33	82.5	0.62	0.16	2.09	>0.05
5	3.13	1.27	1.87	59.74	0.83	0.22	8.67	<0.001
6	3.26	1.33	1.93	59.2	1.03	0.27	7.25	<0.001
7	0.46	0.2	0.26	56.52	0.46	0.11	2.25	<0.05
8	0	0	0	0	0	0	0	>0.05
9	0.93	0.33	0.6	64.51	0.51	0.13	4.58	<0.001
10	0.93	0.33	0.6	64.51	0.51	0.13	4.58	<0.001
11	0.2	0.07	0.13	65	0.35	0.09	1.47	>0.05

*Before Treatment, **After Treatment, ***Standard Deviation, ****Standard Error

Table 3: Effect of therapy on individual questions of SS-QOL scale (After treatment)

S. No	BT*	AT**	M. Diff	% of Relief	SD***	SE****	't' Value	P Value
1	4.73	10.67	5.93	55.67	2.89	0.75	7.95	<0.001
2	4.53	9.53	5	52.46	4.04	1.04	4.80	<0.001
3	14.2	20.93	6.73	32.15	6.36	1.64	4.10	<0.001
4	10.07	21.27	11.2	52.65	7.89	2.04	5.49	<0.001
5	8.47	17.67	9.20	52.06	6.12	1.58	5.82	<0.001
6	6.93	11.73	4.80	40.92	3.72	0.96	4.98	<0.001
7	7	15.27	8.27	54.15	7.24	1.87	4.43	<0.001
8	10.53	16.33	5.8	35.51	6.28	1.62	3.57	<0.01
9	8	11.87	3.87	32.6	3.83	0.99	3.91	<0.01
10	5.53	15.73	10.2	64.84	6.85	1.77	5.77	<0.001
11	15	15	0	0	0	0	0	>0.05
12	3.8	9.47	5.67	59.87	4.29	1.10	5.12	<0.001

*Before Treatment, **After Treatment, ***Standard Deviation, ****Standard Error

Table 4: Effect of therapy on total score of SS-QOL and NIH SS (After treatment)

Domain	BT*	AT**	M. Diff	% of Relief	SD***	SE****	T Value	P Value
SS-QOL	98.8	175.47	76.67	77.6	49.42	12.76	6.01	<0.001
NIH SS	10.6	3.87	6.73	63.49	3.79	0.98	6.88	<0.001

*Before Treatment, **After Treatment, ***Standard Deviation, ****Standard Error

Table 5: Overall result of therapy on SS-QOL and NIH SS

Assessment	Marked Improvement (%)	Moderate Improvement (%)	Mild Improvement (%)	No improvement (%)
SS-QOL	0 (0)	6 (40)	4 (26.67)	5 (33.33)
NIH SS	4 (26.66)	8 (53.33)	2 (13.34)	1 (6.67)

The drug administrated through nose as nasya reaches up to the brain and eliminates only the morbid doshas responsible for producing disease. The nose is connected pharmacodynamically through vascular system and nerve plexus of ophthalmic and maxillary branches of trigeminal nerve. The nasal medication can reach the intra cranial circulation through facial vein. Nasya or nasya dravya may be acting on important centers of the brain by that it may show systemic effects by controlling various neurological, endocrine and circulatory functions[10]. May be because of these effects, in present study, good improvement was observed in NIH SS items like, facial palsy, higher mental functions and speech problems. As the patients received conventional modern medicine, panchakarma, physiotherapy and speech therapy at a same time, it is not possible to assess the effectiveness or failure of each and every individual treatment. Because of this integrated approach it is also not possible to say which treatment strategy is effective / failed in which domain / item of NIH SS and SS QOL. Internal Ayurvedic medicines were not prescribed because the patient has been receiving internal modern medication. To prevent drug to drug interactions internal Ayurvedic medicines were not prescribed and only such type of external panchakarma procedures were selected which are suitable to the patient and doesn't interact with other treatment modalities. Thus the present integrated approach has limited the freedom of Ayurvedic treatment options. The current study observed a group of patients receiving a wide variety of treatments at stroke unit care which includes panchakarma. There were no previously published works are available on stroke unit care with panchakarma (Pub Med database). The present study though novel, it was limited by various short comings like, lack of follow up, evaluation of sample size was not possible and being it an observational study, the line of treatment and duration of treatment varied from patient to patient. Still, the present study is the first, to the best of our knowledge to evaluate the efficacy of multimodal personalized treatment strategies in a real stroke unit care clinical setting. Even though the present study didn't set out to identify specific effective components of stroke unit care it could describe the efficacy of stroke unit care with panchakarma along with other interventions provided by multidisciplinary team. It is common for stroke patient to seek help of alternative medicine. Premature discharge owing to non availability of organized form of support for acute and long term care in hospitals which practice western medicine is an important reason for stroke sufferer to seek alternative form of treatment[11]. By considering the above facts, the present study included panchakarma in the stroke unit care protocol and it has provided encouraging results.

CONCLUSION

The results are positive and encouraging especially in reducing the severity of stroke (on NIH SS) and improving the quality of life of stroke patients (SS QOL). Further studies like, carefully designed RCTs having groups like stroke unit care with panchakarma and without panchakarma and well designed observational studies with large sample are required to substantiate the results of the present study.

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