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RESEARCH ARTICLE

EVALUATION OF EFFICACY OF KUKKUTANDA POTTALI SWEDA AND KUKKUTANDA UPANAHA SWEDA IN MANYASTHAMBHA- A COMPARATIVE STUDY.

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Abstract

from the supernatant and precipitated pellet of 50% methanol concentration. Therefore, since anti-inflammatory activity was detected from the water phases in the supernatant and precipitated pellet of 50% methanol concentration among *P. brevitarsis* larva extracts, it was estimated that the active substances have a tendency of both strong and weak hydrophilicities.

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Introduction:-

Today is the era of modernization and fast life. Everybody is busy and living stressful life, changing of life style of modern human being has created several disharmonies in his biological system. advancement of busy, professional and social life, improper sitting posture in offices, continuous work in one posture and over exertion, jerking movements during traveling and sports-all these factors create undue pressure and stress injury to the spine and plays an important role in producing disease like cervical spondylosis [1].

The incidence of neck pain in adult is approximately 20-50% per year; the prevalence's of cervical spondylosis is similar for both sexes although the degree of severity is greater for males. Approximately 95% of population of people by age 65 have cervical spondylosis to some degree, it's the most common spine dysfunction in elderly people. The discs between the 3rd and 7th cervical vertebrae are most commonly affected. Repeated occupational trauma may contribute to development of cervical spondylosis [2]. Cervical spondylosis is the term given to the occurrence of osteoarthritis in the cervical spine. It is characterized by degeneration of intervertebral discs and osteophyte formation this is extremely common and radiological changes of cervical spondylosis are very frequently in 50. It leads to pain in the neck that may be radiate and neck is held rigidly. Paraesthesia and sensory loss may be found in the affected segment and there may be lower motor neuron sign [3]. It disturbed the daily routine and overall life of the patient. Person can't perform day to day work properly due to severity of pain and stiffness.

Looking into sign and symptoms of cervical spondylosis one can correlate it with manyasthambha. It is a vatajanatanmajavyadhi [4]. The symptoms of which includes ruk and sthambha in manyapradesh and associated asthi and sandhis. Acharya Sushruta have mentioned 2 types of manyasthambha i.e. vataja and vatakapahaja [5]. In initial stages of manyasthambha there is vataavarana by kapha which later turns out to be kevalavatyadhi.

Because of its prevalence and unavailability of satisfactory management the particular alignment has become a challenge for health provider.

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Swedanakarma is important *purva karma* next to *snehana*. Besides being the principle *poorvakarma* procedure, *swedana* is the specific treatment for a number of disorders of *vatapradhana* and *vatakapaha* diseases [6]. Acharya Charaka has included *swedanakarma* under *shadupakrama*[7] and thus respect *swedana* as a principle method of treatment. The development of neuropathic pain is a complex mechanism, which clinicians and researchers are continually working to better understand. *Kukkutandaswedana* mentioned by Bhavaprakasha for the treatment of *manyasthambha* [8], the *ushna*, *tikshnaguna* of *kukkutanda* along with *saindhavalavana* applied in the method of *swedanakarma* causes *kaphavilayana* and *snigdha*guna of *ghritha* and *ushnaguna* of *swedana* pacifies the *vata*. So the purpose of this study is to observe the efficacy of *kukkutandapottaliSweda* and *kukkutandaupanahasweda* in *manyasthambha*.

Aim:-

“Evaluation of efficacy of *Kukkutanda Pottali Sweda* and *Kukkutanda Upanaha Sweda* in *Manyasthambha* (Cervical Spondylosis)- A Comparative Study”

Objective:-

1. To evaluate the efficacy of *kukkutandasweda* (*Pottali Method*) in *Manyasthambha*
2. To evaluate the efficacy of *kukkutandasweda*(*UpanahaMethod*) in *Manyasthambha*
3. To compare the efficacy of *kukkutandapottali* method and *kukkutandaupanahamethod* in *Manyasthambha*

Materials and Method:-

Ethical committee Approval:-

After approval from institutional ethical committee (with reference number DMIMS (DU) /IEC/2014-15/1249) study was carried out.

Case Definition:-

A diagnosed case of *Manyasthambha* (cervical spondylosis) with clinical symptoms of *Ruk* (pain) and *Sthambha*(stiffness) from 2 yrs without Neurological deficit

Study Design:-

It is a simple comparative Randomized clinical study. Total patients were made in to two Groups A and B. Group A will receive *kukkutandapottali*sweda and Group B will receive *kukkutandaupanahasweda*.

Source of Data:-

Patients suffering from *Manyasthambha* will be selected from O.P.D. & I.P.D. of Mahatma Gandhi Ayurved College and Hospital salod.

Sample Size & Grouping:-

A minimum of 30 Patients equally distributed in each groups.

Group A:-

In this group 15 patients were given *kukkutandapottali*swedana according to classics.

Group B:-

In this group 15 patients were given *kukkutandaupanahasweda* according to classics.

Selection criteria:-

The cases were selected strictly as per the pre-set inclusion and exclusion of criteria.

Inclusion Criteria:-

1. Patients having classical signs and symptoms of *manyasthambha* (cervical spondylosis) since 2 yrs
2. Patients between the age group of 30 to 70 years.
3. Patients of both sex
4. Patients fit for *swedana* therapy were selected.

Exclusion Criteria:-

1. Patients below 30 and above 70 years of the age.

2. Spinal stenosis
3. Ankylosing hyperostosis
4. Kissing spine
5. Traumatic spondylopathy
6. Fatigue fracture of vertebra
7. Tubercular spine
8. Brucellaspondylitis
9. Entrobacterialspondylosis
10. Neuropathic spondylopathy
11. Collapsed vertebra in disease
12. Patients with other systemic condition such as Gouty arthritis, Rheumatoid arthritis
13. History of any surgical diagnostic intervention with reference to the affected joints

Duration of the study:-

In both groups, initially 7 days of treatment followed by 7 days of rest. The total study duration is 14 days.

Procedure:-

The procedure of *kukkutandasweda* may be divided into 3 stages

1. Poorvakarma.
2. Pradhanakarm.
3. Paschat karma.

Group –A:-Procedure of Kukkutandapottaliswedana [9]:-

Poorva karma:-

1. Collection of essential materials
2. Preparation of the *pottali*
3. Preparation of patient

Collection of essential materials:-

Ingredients required are:-

Tila tail 50 ml-for *abhyanga*, *Kukkutanda* (eggs), *Saindhavalavana* 10 gms, Ghrita 30 ml, Cloth for preparing *pottali* (45×45 cms), small bowl, tying thread of 30 cms in length to tie a tuft. Spatula for stirring, induction, frying pan, small towel and *abhyanga* table.

Preparation of the Pottali:-

The contents of all the eggs (except the shell) are emptied into a bowl. To this 10ml *ghrita* & 10gms *saindhavalavana* is added. The entire mixture is stirred well and made to reach a semi-solid consistency over a induction. The scrambled and processed eggs are poured on a cloth and tied into a *pottali* and kept ready for use.

Pradhanakarma:-

After *abhyanga*, the *pottali* is dipped in *ghrita* being heated on a water bath and gently rubbed in a circular manner over *manyaregion* with intermittent dipping in warm *ghrita* until *samyak swinna lakshanas* occurs.

Paschaat Karma:-

After *swedana* the part is wiped with a towel dipped in warm water and the wetness is gently wiped off with dry clean towel. Then the patient is to be advised to take complete rest for half hour.

Group-B : KukkutandaUpanahasweda [10]:-

Poorva karma:-

1. Collection of essential materials
2. Preparation of *Upanahasweda*
3. Preparation of patient.

Ingredients required are:-

Tila taila 50 ml- for *Abhyanga*, 4 *Kukkutanda* (eggs), *Saindhavalavana* 10 gms, *Ghrita* 30ml *Erandapatra*, nagamani cloth – 2 and ½ meter length 1 meter width, Frying pan, small bowl, spatula, & chair

Preparation of Upanaha:-

The contents of all the eggs (except the shell) are emptied into a bowl. This 10ml *ghrita* & 10gms *saindhava* is added. The entire mixture is stirred well, this mixture is poured over a heated frying pan and it should be in a low flame, when it becomes like flake (omelet) kept over *erandapatra* & ready for use. The thickness is around 1-1.5 cm for *Swasthikabandhana* 2 and ½ meter and 1 meter width nagamani cloth folded & kept rolled.

Pradhana karma:-

After *abhyanga*, the prepared warm *upanaha* applied over *manya* region considering tolerable heat capacity of the patient then covered with *erandapatra* and tied *swastikabandana* using nagamani cloth.

Paschat Karma:-

Advice the patient to remove the *upanaha* after 12 hour. That body area was to be washed well with lukewarm water.

Methods of Assessment of clinical response:-

Clinical parameters and functional parameters were made out to assess the clinical response in both the groups.

Subjective:-**(Ruk) Pain:-**

- Grade 1 - No pain
- Grade 2 - mild pain
- Grade 3 - moderate pain
- Grade 4 - severe pain

Sthambha):-

- Stiffness
 - Grade 0 - Normal movement
 - Grade 1 - 0 to 25% restricted
 - Grade 2 - 25% to 50% restricted
 - Grade 3 - 50% to 75% restricted
 - Grade 4 - 75% to 100% restricted.

Objective:-**Neck Disability Index [11]****Overall Assessment of Clinical Response:-**

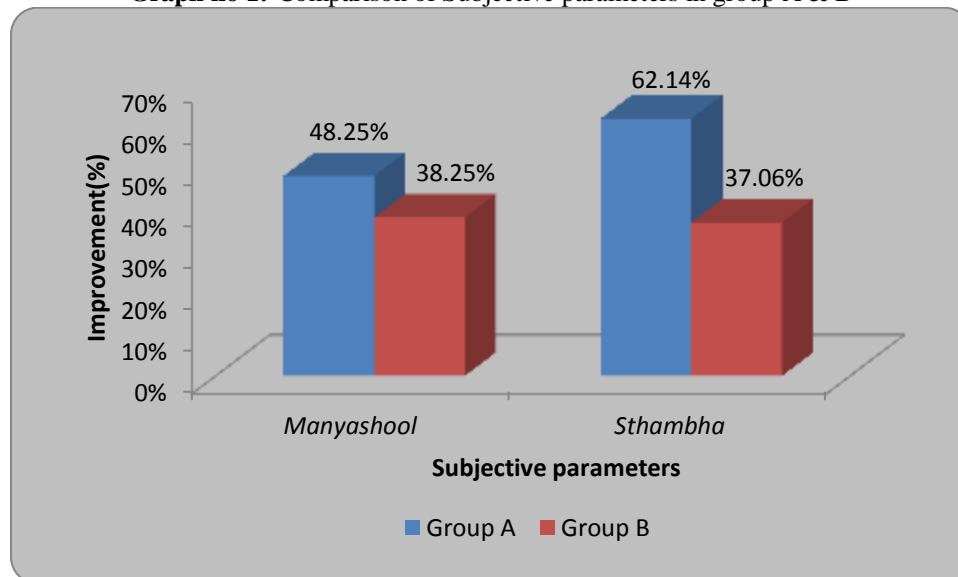
1. Major Response : 50-100% improvement in clinical and functional parameters
2. Moderate Response : 25-50% improvement in clinical and functional parameters
3. Mild Response : 5-25% improvement in clinical and functional parameters
4. Unchanged Response : 0-5 % or No improvement in clinical and f parameters

Result and Observation:-**Table no 1:-**Statistical analysis Subjective Parameter in group A & B

Group	Parameter	Mean BT	Mean AT	% Improvement	t-value	P value
Group A	<i>manyashool</i>	3.73±0.45	1.93±1.22	48.25%	6.44	0.0001S
	<i>sthambha</i>	2.80±0.56	1.06±1.22	62.14%	5.77	0.0001S
Group B	<i>manyashool</i>	3.66±0.48,	2.26±0.79	38.25%	4.83,	0.0001S,
	<i>sthambha</i>	2.86±0.35	1.80±1.08	37.06%	3.75	0.002S

Group A: The overall effect of treatment on subjective parameters for *manyashool* shows t=6.44, p value is equals to 0.0001 which shows statistical significant difference before and after treatment. *Sthambha* shows t=5.77, p value is equals to 0.0001 which shows significant difference before and after treatment in *sthambha*.

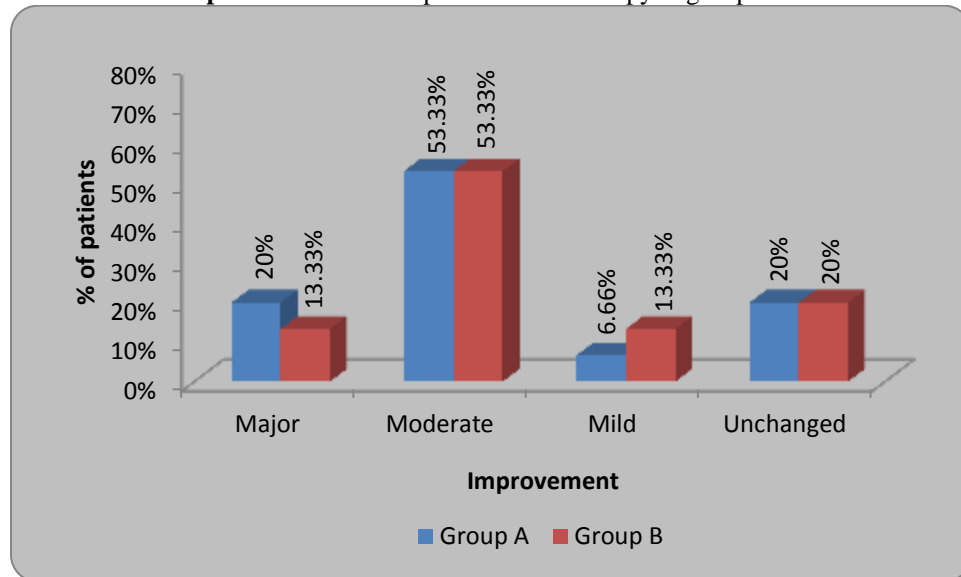
Group B: The overall effect of treatment on subjective parameters for *manyashool* shows t=4.48, p value is equals to 0.0001 which shows statistical significant difference before and after treatment. *Sthambha* shows t=3.75, p value is equals to 0.002 which shows significant difference before and after treatment in *sthambha*.

Graph no 1:-Comparison of Subjective parameters in group A & B**Table no 2:-**Overall improvement before and after treatment in group A & B

Improvement	Group A		Group B	
	No of patients	Percentage (%)	No of patients	Percentage (%)
Major	3	20	2	13.33
Moderate	8	53.33	8	53.33
Mild	1	6.66	2	13.33
Unchanged	3	20	3	20
Total	15	100	15	100

In the Group -A it is found that major responded patients are 3 (20%) and the Moderate Responded patients are 8 (53.33%), Mild responded patients are 1 (6.66) and the last category of Not responded is 3 (20%) of the results when compared with the parameters of subjective and objective together.

In the Group -B it is found that major responded patients are 2 (13.33%) and the Moderate Responded patients are 8 (53.33%), Mild responded patients are 2 (13.33) and the 3 (20) patients in the last category of Not responded of the results when compared with the parameters of subjective and objective.

Graph no 2:-Overall improvement of therapy in group A &B

The statistical analysis was done by using descriptive and inferential statistics using Chisquare test, student's paired and unpaired t test and software used in the analysis were SPSS 17.0 version, GraphPad 6.0 version and EPI-INFO 6.0 version and $p < 0.05$ is considered as level of significance.

The overall improvement of the objective parameters shows statistically significance difference before treatment and after treatment.

Discussion:-

The statistical analysis was done on *pottali* & *upanaha* method of *kukutandaswedana*. Both *pottali* & *upanaha* showed significant results in all the parameters. There was no significant difference observed in the efficacy of the treatments in between two groups statistically. Clinically *Kukutandapottali* showed better improvement compared to *upanaha* in all parameters.

For the parameter Pain, In group-A the mean BT 3.73 was reduced to 1.93 after treatment the t value is 6.44, $p < 0.0001$ and Relief 48.25% and in group B the mean was BT 3.66 was reduced 2.26 after treatment t value is 4.83 $p < 0.0001$ value, and Relief 38.25% Hence clinically, Group A patients showed better improvement in reduction of pain. There was no significant difference observed in the efficacy of the treatments in between two groups.

For the parameter Stiffness In group-A the mean was BT 2.80 was reduced to 1.06 after treatment the t value is 5.77, $p < 0.0001$, and Relief 62.14% and in group B the mean BT 2.86 was reduced 1.80 after treatment the t value is 3.75, $p < 0.002$ and Relief 37.06% Hence clinically, Group A patients showed better improvement in reduction Stiffness. There was no significant difference observed in the efficacy of the treatments in between two groups.

For the objective parameter Neck disability Index In group-A the mean was BT 65 was reduced to 37.33 after treatment the t value is 7.490, $p < 0.0001$, and Relief 42.56% and in group B the mean BT 74.46 was reduced 57.80 after treatment the t value is 4.628, $p < 0.0001$ and Relief 22.37% Hence clinically, Group A patients showed better improvement. There was no significant difference observed in the efficacy of the treatments in between two groups.

Discussion on probable mode of action of *swedana*:-

The sedative effect produced relieves the pain in the area. This may be because of the increased blood supply which produces removal of waste products hence getting good nourishment [12]. Heat is also a counter-irritant i.e. the thermal stimulus may affect the pain sensation as explained in pain gate theory of Melzack and Wall [13]. This explains the effect of heat applied on the nerves. *Vāta* is the responsible factor for inducing pain [14] in the body and the properties of *Vāta* and *Swedana* are exactly the opposite. Hence, the heat can cause reduction in pain by reducing the swelling, removing the coldness at the site and causing perspiration [15].

Relieves Stiffness (Stambha):-

Stiffness is a resultant of excess *shītaguna*. *Vayu* by *rukshaguna* absorb *snigdha* which results in *stambha*. *Swedana* by its *snigdha* and *uṣhna* property relieves *stambha* [16]. *Uṣhnaguna* of *swedana* does *srotośuddhi* and *amapāchana* and relieves stiffness. The rise in temperature induces muscle relaxation and increases the efficiency of muscle action, as the increased blood supply ensures the optimum conditions for muscle contraction [17].

Relieves Coldness :-

This is mainly due to *uṣhnaguna* of *Sweda*. As a result of the increased metabolism, the output of waste products from the cells is increased. These include metabolites, which act on the walls of capillaries and arterioles causing dilation of these vessels. In addition, the heat has a direct effect on the blood vessels, causing vasodilatation, particularly in the superficial tissues where the heat is more. Stimulation of superficial nerve endings can also cause a reflex dilatation of the arterioles. As a result of the vasodilatation, there is an increased flow of blood through the area so that the coldness of body gets re-moved [18].

Relieves heaviness:-

By means of *swedana*, the fluids sustained in the body are being excreted through the *swedana* and hence the feeling of lightness occurs in the body [19].

Conclusion:-

Kukkutanda, *Ghrīta* and *Saindhava* having *vata* and *brumhana* properties Conclusion can be made from the present study that *Kukkutanda* and *swedana* can do better to relieve pain and stiffness. No complications of *swedana* (*atīyoga*, *ayoga* and *mīthya yoga*) were absorbed in this study. Both *pottali* & *upanaha* showed significant results in all the parameters. There was no significant difference observed in the efficacy of the treatments in between two groups statistically except Neck disability index. Clinically *Kukkutanda* and *pottali* showed better improvement compared to *Upanaha* in all parameters.

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