



Efficacy of *Nasya Karma* and *Trayodashanga Guggulu* for the Management of *Avabahuka* (Frozen Shoulder)

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Article Info

Article history:

Received on: 10-04-2022

Accepted on: 26-07-2022

Available online: 31-08-2022

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ABSTRACT:

Background: *Avabahuka* (Frozen Shoulder) is one of the type of musculoskeletal disability primarily affecting the middle aged to older persons as a degenerative and neurological condition with symptoms being pain and disability. Modern approaches comes with wide range of modalities such as analgesics, muscle relaxants, steroids, physiotherapy, and even operative procedures but none of them gives satisfactory and permanent results.

Aim: To study the efficacy of *Mahamasha Taila Nasya* with *Trayodashanga Guggulu* in comparison to only administration of *Trayodashanga Guggulu* in *Avabahuka*.

Materials and Methods: This study was conducted on 36 clinically diagnosed cases of *Avabahuka* from OPD of Ch. Brahm Prakash Ayurved Charak Sansthan, Khera Dabar, Najafgarh, New Delhi in a period of 18 months after taking institutional ethical clearance. Parameters to evaluate the analgesic effect were SPADI Score, Assessment of *Bahupraspandanhara* and Assessment of *Ansa Shoola*. Participants were divided into two groups: Group A – *Mahamasha Taila Nasya Karma* with *Trayodashang Guggulu* and in Group B- *Tryodashanga Guggulu* was given.

Results: Both the groups were found equivalently significant when compared statistically with the difference found between two groups as- in Group A there was a relief of 63.41% in *Bahupraspandanhara*, *Ansa shool*- 71.05% and SPADI Score – 30.86% whereas in Group B there was a relief of 60.98% in *Bahupraspandanhara*, *Ansa shool*- 61.54% and SPADI Score – 29.57%. Clinically, Group A was found better than Group B.

Conclusion: Both the groups showed mild to moderate relief in the management of *Avabahuka*. No major adverse or side effects were encountered during the course of study.

Keywords: *Mahamasha Taila Nasya*, *Trayodashanga Guggulu*, *Avabahuka*, Frozen Shoulder.

INTRODUCTION

“*hastmeva pradhantam yantranam*”¹ quoting this statement about *Hasta*; the Hand, *Acharya Sushruta* emphasized the significance of Hand, as amongst all the joints of human body the Shoulder joint exhibits the

greatest range of motion and all the works or tasks are mainly dependent over the Hands, this allows complex movements and functions to be carried out of daily living and work². *Avabahuka* is one such disease which is being



mentioned in Ayurvedic texts which restricts the day to day routine of an individual. It is caused by *Kupita Vata Dosha* localized around the *Ansa Pradesh* (Shoulder region) causing *Shoshana* (wasting/weakness) of the *Ansa Bandanam* (Shoulder joint complex), there by leading to ***Akunchana*** of the local Sira causing *Bahupraspandanahara* (hampers the normal activities of the Shoulder region). In preliminary stages of disease *Ansa Shosha* is seen whereas *Shleshak Kapha Kshaya i.e. loss of the Shleshaka Kapha* from the Shoulder joint occurs in the subsequent stage. Due to these, symptoms like *Ansa Shoola* (Shoulder pain during movement), *Ansa Stabdata* (Shoulder joint stiffness) etc. are manifested³. On analysing the Etiopathogenesis, it is possible to understand that *Avabahuka* as an illness manifested due to the depletion of tissue elements (*Dhatu Kshaya*) as well as *Sanshrishta Dosha*⁴, as commented in *Madhukosha Tika*, and can be concluded that it is a *Vata Kapha Janya Vyadhi*⁵. The severe consequences caused by *Avabahuka* can be understood by the fact that Acharya Sushruta included *Vata Vyadhi* amongst the *Astamahagada*⁶ (8 major diseases); when *Avabahuka* belongs to the wider umbrella of *Vata Vyadhi*. A similar disease is paralleled in contemporary system of medicine with Frozen Shoulder (also referred to as Adhesive Capsulitis), characterised by pain, restricted movement of the Shoulder and passive Glenohumeral motions. The pathological changes in Frozen Shoulder occurs due to degeneration and focal necrosis of the Supraspinous tendon⁷. Adhesive Capsulitis refers to the fibrosis of the Glenohumeral joint capsule, manifested by diffuse, dull, aching pain within the Shoulder and progressive restriction of motion of the same⁸. The prevalence of the same is appraised to be approximately 2-5 % in general population⁹. It peaks between 40 – 70 years of age. Females are more often affected than males¹⁰.

In reference to management of Frozen Shoulder, the contemporary system of medical science aims at pain relief, prevention of recurrence and improving neurological functions with Anti- inflammatory medications, analgesics and muscle relaxants being the drug of choice; one of the example being NSAIDs (Non-steroidal anti-inflammatory Drugs). These modalities are not fulfilling the goal of patients because of very high cost and its therapeutic limitation(s). All this creates a huge necessity to find a safer, effective and economical management for the treatment of *Avabahuka* and here comes the role of Ayurveda. The unique treatment modality, Ayurveda provides long lasting results with a better prognosis to

patients through its three basic principles of treatment i.e. *Nidana Parivarjana*, *Sanshamana* and *Sanshodhana*. To counter act the related *Samprapti* (disease pathology) of *Avabahuka* one can adopt suitable therapies like *Nasya Karma*, *Sneha Paana*, *Abhyanga*, *Swedana* etc. as per the classics. Amongst the five measures of the *Panchkarma* procedures, *Nasya Karma* holds a very special place as it is one of the best treatment for *Vata Dosha*. *Nasya Karma* (administration of drug through Nose) is not only limited to cure at Doshik level but is indicated especially for *Uttamanga*, the *Shira Pradesh* (Head region), as the Nose is considered the gateway to *Shira Pradesh* (Cranial Cavity) (*Nasa hi Shiraso dwaram*). Acharya Vagbhata also recommended *Nasya Karma for Urdwajatrugata Rogas*¹¹. For the present work, *Mahamasha Taila Nasya with Trayodashanga Guggulu* was studied in comparison to only administration of *Trayodashanga Guggulu* with the following Aim and Objectives as.

AIM

To study the efficacy of *Mahamasha Taila Nasya with Trayodashanga Guggulu* in comparison to only administration of *Trayodashanga Guggulu in Avabahuka*.

OBJECTIVES

1. Comparative evaluation of efficacy of *Trayodashanga Guggulu* with and without *Mahamasha Taila Nasya*.
2. To assess the reduction in SPADI Score.

MATERIAL AND METHOD

Plan of Study: An open label single centre clinical trial was conducted, where the patients were divided into two groups; one intervention group and one comparator group, and given treatment with specific duration with one week of follow up. Patients were given specific guidance on food and lifestyle changes. Prior to the initiation of the trial, the Institutional Ethics Committee (IEC) approved it followed by registration on CTRI and the written consent was signed from each patient.

IEC Code: 2018/PK-04/MD/10

CTRI No.: CTRI/2020/02/023407

Selection of patients: 36 clinically diagnosed cases of *Avabahuka* (Frozen Shoulder) from OPD of Ch. Brahm Prakash Ayurved Charak Sansthan, Khera Dabar, Najafgarh, New Delhi were selected on the basis of

diagnostic and inclusion criteria.

Criteria of diagnosis: The main criteria of diagnosis of patients were based on the cardinal associated sign and symptoms of disease based on the Ayurvedic and modern texts.

Inclusion criteria:

1. Patients having the sign and symptoms of *Avabahuka* as *Bahupraspandanahara* (limited range of motion of the upper limb) and *Ansa Shoola* (pain in shoulder region), for more than one month.
2. Patients within the age group of 20-60 years.
3. Patients fit for *Nasya Karma* as per the text (*Charaka Samhita Sidhi Sthana 2/22*).
4. Patients of either gender (male and female).

Exclusion criteria:

1. Patients of Shoulder joint dislocation/fracture or has the history for the same.
2. Pregnant women and lactating mothers.
3. Patients suffering from major systemic disorders e.g. IHD, RA, Gout, SLE.
4. Malignant and Immuno-compromised patients (AIDS).
5. Patients unfit for *Nasya Karma* as with any anatomical deformity of the nasal passage e.g. cleft palate.
6. Patients with uncontrolled Diabetes Mellitus.

Withdrawal criteria:

1-Patients reporting with any of the following

2-Patients willing to quit in between were allowed to quit and replaced. If any acute illness or complications developed, patient were treated accordingly and were excluded from the study.

Grouping and Selection of the medications

Patients were randomly divided and studied under two Groups viz. Group A and Group B irrespective of religion, gender, occupation, caste etc.

Group A: Mahamasha Taila Nasya with Trayodashanga Guggulu

Group B: Administration of Trayodashanga Guggulu only

Treatment Schedule- Table- 1 Showing Details of Nasya Karma

Duration of administration of Nasya: 2 sessions of 7

days of *Nasya Karma* with 7 days of rest period in between.

Time of administration of Nasya -Before meal

Frequency of administration of Nasya - once a day

Dosage for Nasya-8 Bindu (4ml approximately) each nostril **Source of procurement**- GMP certified company (IMPCL)

Procedure-As per standard operative procedure of *Nasya Karma*

Oral administration of Trayodashanga Guggulu-

Duration of administration: 21 days

Time of administration- *Adhobhakta* (after meal)

Frequency of administration- twice a day **Dose:** 3 gm daily in divided doses (as per AFI) **Anupana**- *Mandoshana Jala* (Lukewarm water)

Source of procurement- GMP certified company (IMPCL)

Methodology

1. Drug, dosage and duration: Treatment schedule is mentioned above.

2. Criteria of Assessment: The patients were assessed thrice during the trial; before initiation of treatment, on 7th day and on 21st day and followed up on 28th day, for which subjective and objective parameters were adopted as follows. Table No. 2: Showing Parameters of assessment

Subjective Parameters

A) Assessment of *Bahupraspandanahara*- Table No. 3- Showing Scoring of *Bahupraspandanahara*

B) Assessment of *Ansa Shoola*- Table No. 4- Showing Scoring of *Ansa Shoola*

Objective Parameter

SPADI SCORE SCALE

The Shoulder Pain and Disability Index (SPADI) is a self-administered questionnaire that consists of two dimensions, one for pain and the other for functional activities. The pain dimension consists of five questions regarding the severity of an individual's pain. Functional activities are assessed with eight questions designed to measure the degree of difficulty an individual has with various activities of daily living that require upper-extremity use. The SPADI is the only reliable and valid region-specific measure for the Shoulder. Table No. 5-

Showing SPADI Score Scale

Interpretation of Scores Total pain score: .../ 50 x 100 =...% Total disability score: .../ 80 x 100 =...% Total SPADI score: .../ 130 x 100 =... Table No. 6- Showing Schedule of the study

RESULTS

Illustration No. 1- Showing According to % Relief in Patients, Table No. 7- Showing Comparison in Percentage Relief in Patient. Table No. 8 – Showing Percentage Relief in both the groups in Assessment Parameters

OBSERVATIONS

Demographic Data: Maximum 47.22% of patients were from the age group of 41-50 years, 63.89% were females, 58.33% patients were housewives 80.56% were from middle class, 61.11% patients were vegetarian, 88.88% patients were Hindus and 44.44% belonged to *Vata-Pitta Prakrati*.

Data Related to Disease: 66.67 % (24 in number) showed the involvement of the right Shoulder joint and 25 (69.44 %) patients had nothing as the causative factor, 9 (25 %) patients had developed *Avabahuka* post jerk injury and only 2 (5.56%) patients had trauma as the causative factor for the development of *Avabahuka*.

The *Ansa Shoola* and *Bahupraspandanaharta* aggravated more on certain factors like late night, cold exposure, physical exertion, trauma, stretch, sprain etc. and relieved by application of warmth, hot fomentation, slight massage and rest. Panchakarma Observations: None of the patients developed any complications, or any untoward symptom or any side effects during the course of treatment in the study group and therefore the treatment modalities are safe and are of therapeutic value.

DISCUSSION

Treatment (Chikitsa) in Ayurveda is always being the *Samprapti Vighatana* (breakdown of the chain of pathological events), for which there are three options; *Nidana Parivarjana* (avoidance of the causative factors), *Shamana* (conservative treatment by oral and topical medications) and *Shodhana* (eradication of the morbid Doshas out of the body). To counter act the related *Samprapti* (disease pathology) of *Avabahuka* many treatment options are available as described earlier in the

disease review. For the present work, keeping the classical references as base the two treatments were chosen for assessing their clinical efficacy. We opted *Nasya Karma* (administration of drug through Nose) with *Mahamasha Taila* and *Tryodashanga Guggulu*¹².

Discussion on Mahamasha Taila Nasya Karma

In the current context of *Avabahuka*, the vitiated Vata Dosh leads to the vitiation of Shleshaka Kapha localized at Ansa Sandhi and hampers the usual functions of the Ansa (Shoulder joint). Brihana Karma aims to increase the nutritive content of the body or to provide nourishment; thus covers all the possibilities¹². Most of the drugs of Mahamasha Taila are *Madhura Rasatmaka*, *Ushna Veeryatmaka*, *Madhra Vipaki Guru*, *Snigdha* and *Balya* in nature (as discussed above); provides a nutritional content to build muscles and other Dhatus, hence is chosen for the present study so as to include all the possible available the treatment options; *Vata Shamana*, *Agni Vardhana*, *Dhatwagni Deepana*, *Vedana Shamana* and *Rasayana*. Nasal route is an attractive option of drug delivery due to its non- invasiveness. It is easy to perform yet most vital therapeutic intervention from Ayurvedic treatment modalities especially *Panchkarma*. Acharya Sushruta also told that, systemically performed *Nasya Karma* causes clarity of sense organs, sound sleep, cheerful appearance etc. and hence has applied aspects on CNS, senses, local, endocrinal and at systemic level. If we administer a medicine through the Nasa within a short interval it affects the brain. Selection of medicine depends upon Doshas involved in a particular disorder. The pattern of induced activity depends on the physical and chemical properties of the stimulant *Nasya* drug molecule of the respective substance. The physical form is mainly responsible for the absorption while the type of action is dominantly decided by the chemical constituents present in the drug.

The most significant elucidation of mode of action of *Nasya Karma* in the present context can be understood as given by Acharya Sushruta. Acharya Sushruta opines that the *Shringataka Marma*, is a *Sira Marma*, situated at the site of the union of the *Siras*, supplying to the Nose, Ear, Eye and Tongue. *Nasya* drug acts through absorption by the *Shringataka marma*. After absorption of the drug, it acts on the diseases of *Skanda*, *Ansa* and *Greeva* and carries out the effects as per the attributed properties of the *Nasya Dravya*; here, *Mahamasha Taila* does *Brihana* of the affected Ansa Pradesh. On comparing the modern anatomy, *Shringataka Marma* can be best considered as

Cavernous sinus which receives drainage from sphenoparietal sinus, middle cerebral veins, ophthalmic veins and drain through the superior and inferior petrosal sinus, hence a *Sira Marma*. Commentator Indu of Ashtang Sangraha opined *Shringhataka* as the inner side of middle part of the head i.e; *Shiraso Antarmadhyam*. That makes the mentioning of the *Shringhataka* in this context to be more reasonable.

To conclude, *Brihana Nasya Karma* with *Mahamasha Taila* is proficient in *Avabahuka* by virtue of its *Guru, Snigdha Balya, Vatahara* and *Brihana* (nutritive) actions.

Discussion on *Shaman Chikitsa (Tryodashanga Guggulu)* *Tryodashanga Guggulu* is a multidrug formulations corrects the *samprapti* of *Avabahuka* on account of their *Shothahara, Dhatwagnideepana* and *Vatanulomana* effect. As according the Ayurvedic principles, *Agnimandya* always creates *Anulomagata Dhatukshaya* (progressive degeneration of the subsequent bodily tissues) which ultimately leads to the manifestation of *Vata Vyadhi*. Being one among the *Vata Vyadhi*, *Agnimandya* plays an important role in *Avabahuka*. *Agnimandya* can be tackled by the *Dravyas* containing *Deepan- Pachan* properties e.g; *Shunthi, Ajawayan* and *Shatapushpa*; present in *Trayodashanga Guggulu*. They also acts as *Vatanulomaka, Vatahamaka, and Vedanasthapaka* in nature. In *Avabahuka*; *Dhatukshaya Rodhaka, Dhatuvaradhaka* and *Daurbalyanashaka Chikitsa* is desirable, as *Mansa* and *Asthi Dhatu Kshaya* was found associated with generalized weakness in *Dhatu, Sandhis*, etc. The drugs like *Ashwagandha, Shatavari, Guduchi, Guggulu, Vriddhadaru, Babula, Hapusha* and *Goghrita* acting as *Balya, Rasayan, Vayasthapak* in nature which is very essential in a geriatric prone disease like *Vata Vyadhi (Avabahuka)*. In *Avabahuka, Vata Prakopa, Dhatu Kshinata, Dhatu Rukshata, Parushata* and *Asthi Dhatu Kshaya* generally founds. The contents of *Trayodashanga Guggulu* were mainly *Guru, Snigdha Gunatmaka, Madhur Rasa, Madhur Vipaki* and *Ushna Viryatmak* in properties, which corrects the above-mentioned symptoms. Thus the contents of *Trayodashanga Guggulu* directly took part in the *Samprapti Vighatan* by their individual properties of every drug and as a whole *Kalpa* (formulation). Illustration no.2 -Properties of *Trayodashanga Guggulu*.

CONCLUSION

The conclusion drawn from the present study is as- “*Avabahuka*” indicate a diseased condition of the Shoulder

joint associated with pain and restricted movement with stiffness which hampers the day-to-day activity of an individual. In Modern medical science none of the treatment modality has ever proven to be called as a complete treatment for Frozen Shoulder. Hence it is the need of hour to find a safer, economical and effective management for the treatment of the same. Ayurveda can bestow much promising results in the treatment of Frozen Shoulder. Both the groups were found equivalently significant when compared statistically in reducing *Bahupraspandanahara, Ansa Shoola* and SPADI score in *Avabahuka*. Clinically, Group A was found better than Group B. Administration of *Nasya Karma* with *Shaman Chikitsa* was found equally effective as only *Shaman Chikitsa*. Group A (71.05 %) was found better than Group B (61.54 %) in reducing *Ansa Shool* parameter. Both the groups showed mild to moderate relief in the management of *Avabahuka*. The result of this study is highly encouraging and confirms the benefits mentioned for *Nasya Karma* and *Tryodashanga Guggulu* in the management of *Avabahuka*. No major adverse or side effect were encountered during the course of study in both the groups.

Acknowledgement: Nil
Financial support: Nil
Conflict of Interest: Nil

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How to cite this article: Rani T, Singh Vidhi, Wetal V.R, Gupta A "Efficacy Of *Nasya Karma* And *Trayodashanga Guggulu* For The Management Of *Avabahuka* (Frozen Shoulder) - An Original Research Article" *IRJAY*. [online] 2022;5(8); 33-42.
Available from: <https://irjay.com>
DOI link- <https://doi.org/10.47223/IRJAY.2022.5805>

Table no.1 - Showing Details of *Nasya Karma*

Procedures	Ingredients	Dose	Duration
1. local <i>Snehana</i>	<i>Mahamasha Taila</i>	Quantity sufficient	Every day before <i>Nasya</i>
2. local <i>Swedana</i>	<i>Dashmoola Kwath</i>	Quantity sufficient	Every day before <i>Nasya</i>
3. <i>Nasya</i>	<i>Mahamasha Taila</i>	8 <i>Bindu</i> (4ml), each nostril	7 days
4. <i>Kaval</i>	<i>Ushnodaka</i>	Quantity sufficient	Every day after <i>Nasya</i>
5. <i>Dhoompana</i>	<i>Dhoomavarti</i>	3 times, 3 Gusps each nostril	Every day after <i>Nasya</i>
6. Local <i>Swedana</i>	<i>Dashmoola Kwath</i>	Quantity sufficient	Every day after <i>Nasya</i>

Table No. 2: Showing Parameters of assessment

S. No.	Type of parameter	Parameter
1.	Objective parameter	SPADI Score
2.	Subjective parameters	Assessment of <i>Bahupraspandanhara</i>
3.		Assessment of <i>Ansa Shoola</i>

Table No. 3- Showing Scoring of *Bahupraspandanhara*

Observation	Score
Can do work without being affected	0
Can do strenuous work with difficulty	1
Can do daily routine work with great difficulty	2
Cannot do any work	3

Table No. 4- Showing Scoring of *Ansa Shoola*

Observation	Score
No pain at all	0
Mild pain, can do strenuous work with difficulty	1
Moderate pain, can do normal work with support	2
Severe pain, unable to do any work at all	3

Table No. 5- Showing SPADI Score Scale

Pain scale	Score
At its worst?	1 to 10
When lying on the involved side?	1 to 10
Reaching for something on a high shelf?	1 to 10
Touching the back of your neck?	1 to 10
Pushing with the involved arm?	1 to 10
Disability scale	Score
Washing your hair?	1 to 10
Washing your back?	1 to 10
Putting on an undershirt or jumper?	1 to 10
Putting on a shirt that buttons down the front?	1 to 10
Putting on your pants?	1 to 10
Placing an object on a high shelf?	1 to 10
Carrying a heavy object of 10 pounds (4.5 kilograms)	1 to 10
Removing something from your back pocket?	1 to 10

Table No. 6- Showing Schedule of the study

	Day 0	Day 7	Day 21	Day 28
Screening	✓			
Assessment	✓	✓	✓	
Follow-up				✓
Observations	✓	✓	✓	✓

Illustration No. 1- Showing According to % Relief in Patients

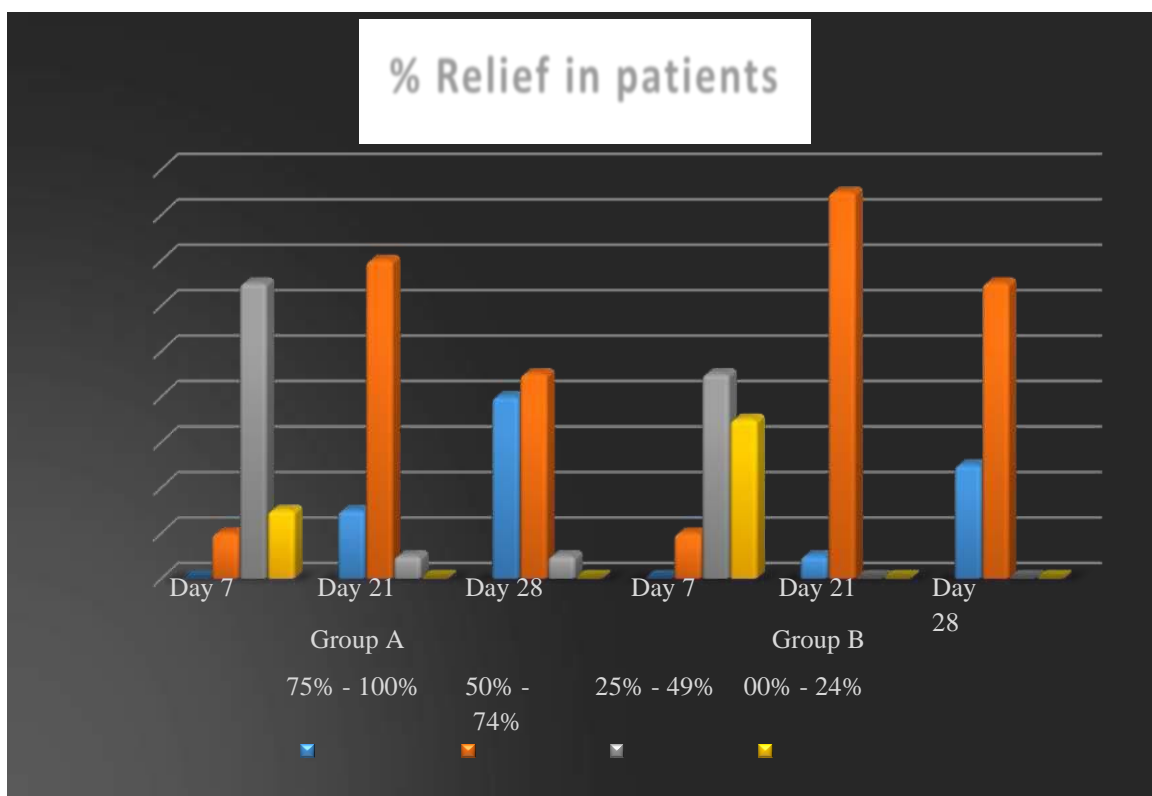


Table No. 7- Showing Comparison in Percentage Relief in Patients

S. No.	% Change	No of patients					
		Group A			Group B		
		Day 7	Day 21	Day 28	Day 7	Day 21	Day 28
1	75% - 100%	00	03	08	00	01	05
2	50% - 74%	02	14	09	02	17	13
3	25% - 49%	13	01	01	09	00	00
4	00% - 24%	03	00	00	07	00	00

Table No. 8 – Showing Percentage Relief in both the groups in Assessment Parameters

Sr. No.	Parameters	Group A	Group B
1.	<i>Bahupraspandanhara</i>	63.41	60.98
2.	<i>Ansa shool</i>	71.05	61.54
3.	SPADI Score	30.86	29.57

Illustration no.2 -Properties of *Trayodashanga Guggulu*.

