
“A Clinical Study on the Role of Abhyanga in Pakshaghata”

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Abstract

Back ground

Pakshaghata is a debilitating disease for which Ayurvedic modalities are very good for the rejuvenation and rehabilitation of the disabled muscles and nerves. Abhyanga, a is an important Ayurvedic treatment method, which has multiple benefits. It is believed that Abhyanga a type of Baahya Snehana, could be effective in the rehabilitative aspects of Pakshaghata treatment.

Study Design and Methodology

A comparative clinical study. Forty patients having Pakshaghata were selected and randomly divided into two groups with 20 patients each. Group A was treated with Abhyanga using Narayana Taila and Group B with Murchhita Tila Taila for one week. Patients were assessed immediately after completion of the treatment and on the 14th day after a period of proper rest.

Objectives of the Study

- 1. To study the effect of Abhyanga with Narayana Taila and Abhyanga with Murchhita Tila Taila in Pakshaghata.*
- 2. To compare the effect of Abhyanga with Narayana Taila with Abhyanga with Murchhita Tila Taila.*
- 3. To develop effective techniques of Abhyanga in Pakshaghata rehabilitation and cure.*

RESULTS

Subjective Parameter Assessment

Abhyanga with Narayana Taila (Group A) showed statistically significant ($P < 0.01$) improvement compared to Abhyanga with Murchhita Tila Taila (Group B)

Objective Parameter Assessment

Results in Group A was similar to ($P > 0.05$) that in Group B.

Overall Improvement of Pakshaghata

Improvement after Abhyanga with Narayana Taila and Abhyanga with Murchhita Tila Taila were similar ($P > 0.05$).

CONCLUSION

Overall improvement of parameters assessing Pakshaghata treatment was noted following Sarvanga Abhyanga treatment with gentle massage pressure using both Narayana taila and Murchhita Tila Taila; although statistically significant relief was noted only for subjective symptoms. Thus it was concluded that Abhyanga treatment with gentle massage pressure was an effective treatment modality for improving weakness from Pakshaghata. Abhyanga with Narayana taila was found to be better than Murchhita Tila Taila in patients with Pakshaghata and it resulted in statistically significant symptom relief.

Keywords: *Pakshaghata, Murchhita Tila Taila, Abhyanga, Narayana taila*

INTRODUCTION

Ayurveda aims at restoration of health which is the equilibrium of body constituents Dosha, Agni, Dhatu and Mala, indicated by the level of satisfaction shown by Atma, Indriya and Mana.¹ Poor maintenance of health causes vitiation of

any of these body constituents leading to many crippling disorders. Pakshaghata is one such kind of debilitating disease where vitiated Vata afflicts the right or left side of the body and produces difficulty in movement, pain and difficulty of speech.² It may be correlated with Hemiplegia of

modern medicine. Cerebro vascular accident or stroke which is common in the diabetes and hypertension prone Indian population causes long term hemiplegia and hemiparesis in almost 50% of the survivors.³ It is a well-known fact that Ayurvedic modalities are very good for the rejuvenation and rehabilitation of disabled muscles and nerves in various neuromuscular disorders including Pakshaghata. According to statistical data, 7, 00,000 Indians are suffering with stroke every year. Out of which 10% recover completely, 25% live with minor impairment, 40% moderate to severe impairment, 10% require care in hospital, and 15% die shortly after the stroke. According to the causes, 85% strokes are due to ischemic conditions. In South India every 56.9 persons out of 100,000 are suffering from stroke or Hemiplegia.

All Acharyas have emphasized in their Samhitas that Vata is the predominant Dosha in the manifestation of Pakshaghata. Gravity of the disease was perfectly judged by ancient physicians even the name given suggests the aggressive nature of Pakshaghata. "Vadha" means to assassinate and "Ghata" means to strike hard and suddenly. Both words suggest a sudden appearance of strong symptoms and sequel like

Shiromarmaghata, Indriyanasha, Ekanga Karmahani and even death. Charaka the legendary healer, declared Pakshaghata incurable if not intervened in early stage.

Shosha of Sira and Snayu which is the most important event in the Samprapti, denotes the need for Brimhana therapy. Being a Vata diaorder Pakshaghata demands a pioneer treatment of Vata i.e. Abhyanga for a longer period of time soon after the recovery from emergency condition. Sooner the treatment started the better.

Treatment of that nature requires more patience and dedication. Fast moving world neglects the emotional need and sufferings encountered by that sector of patients. There lies the need of a helping hand from our great ancient science, where all the results are beyond modern scientific explanations. It is a well-known fact that Ayurvedic modalities are very good for the rejuvenation and rehabilitation of disabled muscles and nerves in various neuromuscular disorders including Pakshaghata.

Abhyanga, a type of Baahya Snehana is an important Ayurvedic treatment method, which has a curative as well as a preventive role in various multi-system disorders. It may be practiced right from

the birth and can be prescribed for all age groups. Generally Abhyanga is administered as Poorva Karma prior to the relevant Pradhana Karma. But in many Vataja diseases it is used as Pradhana Karma as it imparts local treatment directly to the afflicted body part. Samprapti and Chikitsa events that occurs in Pakshaghata involving stiffness of the part effected demands a pioneer treatment method of Vataroga like Abhyanga.

Abhyanga consist of not only nervous stimulation and active muscle actions, there is also active drainage and correction of flow of body fluids .This helps in nutrient supply to the muscles, bones and all the tissues around that part. The unique part about Abhyanga is that the direct application of Ayurvedic medicinal substances in the perfect medium and the gentle rubbing by experienced masseurs helps in easy percutaneous absorption and the desired action in a faster way. Abhyanga which can be done with comparative ease can provide a physical as well as psychological support for the patient. Taking these into account, it was thought that Abhyanga would be more beneficial in the curative as well as rehabilitative aspects of Pakshaghata treatment.

OBJECTIVES

1. To study the effect of Abhyanga with Narayana Taila in Pakshaghata
2. To study the effect of Abhyanga with Murchhita Tila Taila in Pakshaghata.
3. To compare the effect of Abhyanga with Narayana Taila and Abhyanga with Murchhita Tila Taila in Pakshaghata according to a definite treatment protocol.
4. To develop effective techniques of Abhyanga in Pakshaghata rehabilitation and cure.

REVIEW OF LITERATURE

Pakshaghata

Description of Pakshaghata is available in both Bruhatrayee and Laghutrayee. All of them have emphasised Vata as the predominant Dosha in its manifestation.

HISTORICAL REVIEW

Charaka Samhita

Charaka listed it under 80 Nanatmaja Vatavyadhis. It is classified under Madhyama Roga Marga disease. “Swedanam Sneha Samyuktham Pakshaghate Virechanam” is the line of treatment. Jejjata clarifies it as Sneha should be given along with Swedana and Virechana. Whereas Gangadhara clarifies it as Snehayuktha Swedanam and

Snehayuktha Virechanam should be applied.

Sushruta Samhita

In Nidana Sthana first chapter the role of Urdhvagami, Adhogami and Tiryaga Dhamanis in the pathogenesis of Pakshaghata is mentioned. Treatment is mentioned in the Maha Vata Vyadhi Adhyaya of Chikitsa Sthana.

Sangraha Kala

Both Ashtanga Hridayam and Sangraham have followed the Charaka and Sushruta pattern of treatment except for the use of initial term Snehanam instead of Swedanam.

Madhava Nidana

A detailed description regarding the difference between Pakshaghata and Ardhang Vata is stated by the examples of 'Ardhanarishwaravat' and 'Narasinhavat' correspondingly as illustrations.

Bhaishajya Ratnavali & Sarangadhara Samhita

Some drug formulations have been listed for Pakshaghata in these Ayurvedic texts
History of Hemiplegia in Modern Medicine
In the history of modern medicine, Hippocrates was the one who wrote about

the ipsi lateral damage caused in hemiplegia patients. John Cheyne (Neuro Abnormalities), Fisher –(Transient Ischemic Attack) and Charles Scott Sherrington (Central inhibitors) are some names remembered in giving major contribution to the neurological findings in hemiplegia.

VYUTPATHI AND PARIBHASHA

The word Pakshaghata is derived as Shashthi Tat Purusha Samasaviz:- Pakshasya Aaghatah Iti Pakshaghata. Acharya Sushruta while explaining Pakshaghata has used the word 'Paksha' which is commented on by Dalhana as 'Shareerardham'. Aaghatah refers to impairment or injury. Paksha + Ghata, Vadha, Ghatametc also refers to the loss of function of one side of body.

CLASSIFICATION OF PAKSHAGHATA

In Ayurvedic Classics, Svanidanajanya Vata Vyadhi, Dhatu Kshayajanya Vata Vyadhi and Margavarajanya Vata Vyadhi are categorized. Acharya Sushruta classified Pakshaghata into three types as

1. Suddha Vataja Pakshaghata
2. Anya Dosha Samsrista Pakshaghata and Khsaya Hetuja Pakshaghata

Dhatu Kshayajanya Pakshaghata has been again classified by Acharya Gayadas as Sonitaatisritikrita Dhatu Kshayajanya Pakshaghata and Balavadvigrahadita Dhatu Kshayajanya Pakshaghata .

Acharya Sushruta describes lakshanas of Pakshaghata and lakshanas of Ardita as separate entity. Whereas according to Acharya Charaka, lakshanas of Pakshaghata and Ardita can coexist together.

NIDANA

According to different classics Vata rogas including Pakshaghata has the following causative ways.

Aharaja Nidana-due to improper diet

Viharaja Nidana-due to improper routine

Aghataja Nidana-traumatic cause

Marmaghata - Shiromarma, Lohitaka Marma, Kakshadhara Marma.

Sushruta considered Pakshaghata as Vranopadrava

Manasika Nidana-psychological cause

Kalaja Nidana-extreme seasonal cause

Apacharaja Nidana-due to improper treatments

NIDANA OF AAVARANA JANYA PAKSHAGHATA

When Vayu is obstructed by the influence of other Dosha or Dushya or the other

types of Vata-(Anyonya), Avarana occurs. The five main divisions of Vata are Prana, Udana, Samana, Vyana and Apana with general functions of Praspandana, Udvahana, Purana, Viveka and Dharana respectively.

Apart from Nidana for Vataprakopa, Nidana of other Dosha and Dushya also play a role in the Aavarana cause. They are Kapha Prakopanidana Rasa –Raktha Dushtinidana and Medo Dushtinidana.

Nidana of Pakshaghata is same as that for General Vata Rogas. It is described in detail according to different categories.

PURVARUPA

According to Acharya Charaka Avyakta lakshanas are Purvarupa of Vatavyadhi. Chakrapani comments that few ‘mild symptoms’ should be taken as Avyakta Lakshanas. Madhukosha comments on it as ‘Less symptoms’. Not much Purvarupa has been mentioned or noted in Pakshaghata as the onset is usually of a sudden nature.

RUPA

Charaka Samhita

Vama or Dakshina Pakshahanana along with

Cheshtanivriti-loss of movement

Ruja- pain and

Vakstambha-Aphasia or Dysarthria

**Sushruta Samhita, Ashtanga
Hrudayam, Ashtanga Sangraha**

- AnyataraPakshahanana
- Sandhi Bandha Vimoksha
- Akarmanyata
- Achetanam (loss of sensation or consciousness)

Madhava Nidanam

Apart from other common lakshanas Pithanubandhi type has symptoms Daha, Santapa and Murcha, where as Kaphanubandhi type has symptoms Shaitya, Sotha and Gaurava .

Vitiation of Prana and Vyana Vayus cause loss of voluntary movements. Ruksha Shita and Khara Guna of Prana Vayu causes the reduction of Chala Guna of Vyana vayu. Pittavrita Vyana leads to Chesta sanga. Udanavrita Vyana leads to Chesta hani. Kaphavrita Vyana leads to Gati Sanga. Vichetana is caused by vitiation of Prana and Vyana vayus. Sandhi bandha vimoksha due to Ruksha guna of vata.

Vakstambha due to vitiation of Prana and Udana Vayu. Kaphavrita Udana results in Vakgraha. Ruja is considered by charaka

as symptom of Pakshaghata where as Toda and Shoola for Ekanga Roga. Pittavrita Vyana results in Ruja

**Cheshta Nivritti/ Shariradha
Akarmanyata /Karmakshaya/
Karmahani**

The loss of Motor activity either fully or partially occurring to one part of the body includes these symptoms. Acharya Dalhana interprets Akarmanyata as “Ishatkarmakshamam”. Vijayarakshita specifies Ardha as Ardhanarishwaravat, affecting one side of the body, He also defines Paksha as Bahu, Kaksha, Parsvadiparts, Anyataraas left or right half and Akarmanyata as Ishat Chestakshama. Arunadutta while explaining gives the meaning of Akarmanyata as less strength to perform activities.

**Ardhakaya Vichetana/ Shariradha
Achetana**

Chetana means sensation. Acharya Dalhana interprets the word Achetana as Alpachetana-partial decrease of sensation. He further says that the presence of this feature raises the mortality. Gayadas interprets it to be complete loss of Chetana. Todara explains it as IshadsparsaVijnanaie. less sensation

Sandhibandha Vimoksha

Sandhibandha Vimokshana means looseness/laxation of joints. As per the description given by Susruta, when vitiated Vayu travels through Urdhvagami, Adhogami and Tiryaga Dhamanis, it loosens the Sandhibandhana.

Vakstambha

This symptom is mentioned by Acharya Charaka only in reference to Pakshaghata. Vak means speech and Stambha means to stop, to arrest, to cease, etc. Hence deformity in speech or loss of speech can be considered Vakstambha.

Ruja

Ruja means pain and any kind of pain is always associated with Vayu.

Acharya Charaka mentions Ruja as a symptom of Pakshaghata and Toda and Shoola as the symptoms of Ekanga Roga. "SantataRuk" has been mentioned as a symptom in Asthi-Majjaa Gata Vata. In Pakshaghata there is involvement of Snayu and Sira. When Vayu gets aggravated in Snayu, Shoola is produced and when Vayu gets aggravated in Shira, Manda Ruja is produced. Pittavrita Pranavayu also results in Ruja.

Sira-Snayu Vishosha

Sira Snayu Vishosha represents itself as Stambha (rigidity), Hasta Pada Sankocha (Contraction), Vakrata. When Vata affects the Sira and Snayu, the Shita and Ruksha Guna of it causes Kshaya or Vishosha,

Shotha

It is the Kaphanubandha symptom of Pakshaghata. Acharya Susruta says that when vitiated Vayu comes in contact with Kapha, Shaithya Shotha and Guruta are produced. Vitiating of Vyana Vayu results in Shotha.

SAMPRAPTI

Samanya Sampraptiof Vatavyadhi:

Nidana Sevana → Rikta Srotas → Vata Prakopa → Vata Vyadhi

According to Charaka, after causing damage to either the Vama or Dakshina Parshwa, Vata Dosha leads to loss of function of affected side with or without causing Vaksangha.

Vishesha Samprapti

1. Sankhya Samprapti-Only one due to Karma Kshaya seen in all varieties.
2. Pradhanya Samprapti-Rogarambhaka Dosha is Vata, either vitiated primarily or secondarily. In Margavarajanya, Pitta or Kapha doshas interfere with

Vata Dosha. In Dhatu Kshayajanya,
Vata dosha vitiates the dhatu.

3. Vidhi Samprapti-

Karana Bhedena-Nijam, Aganthu

Mode of presentation-Dhatukshayajanya,
Margavarajananya

Dosha bhedena- Kevala Vata,
Pittanubandhi, kaphanubandhi

Sadhyasadyathva Bhedena—Sadya,
Asadhya, Mridu, Daruna

Vikalpa Samprapti-

Kashaya rasa→Rukshalaghu
Guna→RiktaSrotas→VataPrakopa→Dhat
u Kshaya→Pakshaghata

Tikshna, Ushna, Drava, Sara, Lavana
Amla Rasa→Pitta Prakopa→Pitta
Dushti→Rakta Srava→Pakshaghata

Snigdha seethe, guru, manda, Madhura
rasa→Kapha→Medo vridhi→Damani
prathichaya→Margavarodha→Pakshaghata
Marmabhighata→Raktasrava→Dhatu
Kshaya→Pakshaghata

5 , 6 Bala and Kala Samprapti-

It denotes the exacerbation of disease.
Seasonal variations in the affliction, Age
pattern and Sex pattern can be
distinguished.

SAMPRAPTI GHATAKAS

- Dosha-Pradhana Dosha-Vata,
- Prakara-Prana, Vyana, Udana
- Anubandhi-Pitta, Kapha
- Dushya-Dhatu –Rasa, Rakta, Mamsa, Meda
- Upadhatu-Sira. Snayu, Kandara
- Agni-May be affected
- Ama-May be present
- Srotas-Rasa vaha, Rakta Vaha
- Srotodushti-Sangha
- UdhbavaSthana-Pakwashaya
- Sanchara Sthana-Dakshina/Vama Sira, Dhamani, Snayu
- SthanaSamsraya-Shiras
- Adhithana-Ardhasarira

CHIKITSA

Sushruta

Treatment is mentioned in the Maha Vata
Vyadhi Adhyaya of Chikitsa Sthana.

Step-wise protocol has been mentioned in
Sushruta regarding the treatment of
Pakshaghata. First Snehana, then followed
by Swedana, Mrudu Shodhana, Anuvana
and Asthapana. For the benefit of brain-
Sirovasthi. A Taila for Abhyanga-
Anuthailam has been specially mentioned.
Salvana Upanaha and Bala Taila
Anuvana have been specially mentioned.
Treatment should be continued for 3 to 4

months. Akshepakavat treatment is advocated by Susrutha. Dalhana has clarified Akshepakavat as Apathanakavat. Avapeedana Nasya have been advocated in the initial stage. In the aggravation of Apathanakavegas Avapeedana Nasya have to be administered. Drugs for different treatment modalities have been elaborated.

CHARAKA

“Swedanam Sneha Samyuktham Pakshaghate Virechanam” is the line of treatment. Jejjata clarifies it as Sneha should be given along with Swedana and Virechana. Whereas Gangadhara clarifies it as Snehayuktha Swedanam and Snehayuktha Virechanam should be applied.

ASHTANGA HRDUDAYAM

“Snehanam Sneha Samyuktham Pakshaghate Virechanam.”Ashtanga Hrudaya have given more importance to the Snehana part. Snehasamyukta Virechana have been advocated. Ashtanga Sangraha also mentions the importance of Snehana.

Pathya Viharas for Vata Vyadhi are given as Abhyanga, Avagahana, Sukoshna Parisheka, Nirvatha Sthana, Samvahana, Brahmacharya, Ushna Pravarana, AgniAatapaSevana, Snigdha Ushna

LepaParisheka, Tarpana, Karnapurana, Shirobasti, Gandoosha are some of the Bahyasne has used for the treatment of Pakshaghata.

SADHYASADYATHA

- According to Charaka Pakshaghata is Yatnasadhya / Kashta Sadhyaor Asadhya due to Gambhira Sthanasraya,
- According to Susrutha ,Shudhavatajanya-Kashta Sadhya
- Samsrushta Dosha janya-Sadhya
- Kshayaja-Asadhya.
- Astanga Sangraha notes both Sudha vatajanya and Samksrushtadoshajanya as Kruchrasadhyatam

Kshayaja-Asadhya

Madhava Nidana holds the same opinion as that of Susrutha but wants to discard those with Vedananasa and the categories like Garbhini, soothika, Bala, Vridha, and Kshina. Those with excessive bleeding should also be avoided.

UPADRAVA

Specific upadravas of Vatavyadhis are Shotha, Bhagna, Adhmana, Supta Twacha, Kampa etc.

Upadravas of Avarana like Hridroga, Vidhradhi, PleehaRoga and Gulma can be included.

PATHYAPATHYA

No particular Pathyapathya have been mentioned for Pakshaghata. But the pattern for the Vata Vyadhis can be followed which include Hitha and Ahitha Ahara and Viharas. However oily and fatty foods have to be limited to the minimum in case of atherosclerotic patients. In prognosis Ruja is considered as good sign where as another complication of stroke-Reflex sympathetic Dystrophy Syndrome has persistent pain associated with it.

ABHYANGA

Abhyanga though widely accepted and followed by Ayurvedic physicians and general population, has not been standardised yet for its use in Pakshaghata. Therefore this study is planned to evaluate the role of preplanned Abhyanga regimen in the management of Pakshaghata.

- Sushruta advocates Abhyanga to be performed with Taila, Ghrita or any other suitable Sneha after due consideration of Prakruti, Satmya, Ritu, Dosha, Desha and Roga. But, because of easy availability and good effect, Taila Abhyanga is more preferred by him.⁴

- Charaka recommends Abhyanga, if Vata is aggravated in every part of the body⁵.

In Samanya Chikitsa sutra of Vatavyadhi Vagbhata explains that Snehana and Swedana helps to eliminate the stiffness of the body.⁶

- Many actions of Abhyanga are mentioned in Ashtanga Hridaya.⁷
- Sushruta also acknowledge the benefits of Abhyanga.⁸

A pilot study conducted on Abhyanga shows that Abhyanga massage is promising in reducing subjective stress experience. It may be beneficial in lowering Heart Rate in all, and Blood Pressure in prehypertensive subjects.⁹

Vagbhata and other Acharyas hold common opinion regarding the general treatment of Vatavyadhi.¹⁰

- Sushruta has started treatment of Pakshaghata with Snehana.¹¹

Charaka explains the properties of Tilataila as, best among the Taila Varga for the purpose of strength &oleation and is usually used for Abhyanga.¹²

Charaka Samhita, refers to Abhyanga often. In Sutrasthanam V. 78-93 the benefits of applying oil to the body are

described: The body becomes firm, smooth-skinned, free from disturbances of vata and tolerant of exertions and exercise. The body of one who uses oil massage regularly does not become affected much even if subjected to accidental injuries or strenuous work. By using oil massage daily, a person is endowed with pleasant touch, trimmed body parts and becomes strong, charming and least affected by old age.

Charaka details further benefits of oil applied to specific areas. For example, oil gargle (gandusha) provides strength in jaws and voice, development of face, maximum taste and relish in food, non-dryness of throat, lips, absence of dental caries and strong teeth and gums. Applied to the head oil prevents headache, alopecia, greying of hair, balding. Strength is imparted to skull and hair roots and the sense organs become cheerful and complexion glows. Sound sleep and happiness also are experienced. Oil applied daily to the ears decreases diseases due to vata, stiffness in back of neck and jaws, hardness of hearing and deafness. By massaging of oil on feet, coarseness, stiffness, roughness, fatigue and numbness of feet are alleviated in no time. Further, delicacy, strength and firmness in feet, clarity of vision are attained and vata is

pacified. By massage of oil in feet there is no occurrence of sciatica, cracking of sole and constriction of veins and ligaments. Rubbing over the body alleviates foul smell, heaviness, drowsiness, itching, dirt, anorexia, vulgar appearance of sweat.

Sushruta offer similar but much briefer descriptions of benefits from Abhyanga:

“Anointing the body imparts a glossy softness to the skin, guards against the aggravation of vayu and kapha, improves color and strength and gives tone to the tissues of the body. Oily substances affused on the human organism imparts a tone and vigor to its tissues in the same manner as water furnishes the roots of a tree or a plant with the necessary nutritive elements and fosters its growth when poured into the soil where it grows.” Anointing the feet brings on sleep. It is refreshing and invigorating to the body and the sight, removes all drowsiness and sense of fatigue and softens the skin of the soles of the feet.”

Vagbhata- “Abhyanga should be resorted to daily; it wards off old age, exertion and increase of vata; bestows good vision, nourishment to the body, long life, good sleep, good and strong skin.” of the remaining three texts constituting the basis of classical Ayurveda Sarangadhara

specifically declined to comment on Abhyanga because it was already well known for many years.

Acharya Charaka states that Vayu is predominant in tactile sense organ which is located in skin, oil massage is the most beneficial for skin, and hence one should use it regularly.

In Ayurveda, it is believed that there are seven layers of tissue in the body (called dhatus). Each successive layer is more concentrated and life-giving.

'Dalhana' the commentator of 'Sushruta' has mentioned that when 'Abhyanga' is done all over the body for 300 matrakala (1 matrakal = 1/3 second) the snehadravya reaches the roots of the hair. Similarly it penetrates the

- Rasa' dhatu in 400 matrakala.
- Rakta dhatu in 500 matrakala.
- Mansa dhatu in 600 matrakala.
- Med dhatu in 700 matrakala.
- Asthi dhatu in 800 matrakala.
- Majja dhatu in 900 matrakala.

For sneha to reach the deepest layer, it is believed that it must be massaged into the body for 900 matras, roughly five minutes. To give this kind of attention to your entire body, you may need about fifteen-minutes.

IMPORTANCE OF SKIN

Functions of thermoregulation, protection, metabolic functions and sensation. Each square centimeter of skin has 6 million cells, 5000 sensory points, 100 sweat glands and 15 sebaceous glands. Comprises 15 to 20 percent of total body weight. As gatekeeper, the skin absorbs and uses nutrients applied topically. Sometimes irritating chemicals are also absorbed. eg. Contact Poisons.

Structure of Skin

Epidermis, dermis and hypodermis. Keratinocyte and cadherins (cell adhesion molecules) constitutes epidermal cells.

Five layers -Stratum

corneum, Stratum granulosum, Stratum spinosum, Stratum germinativum. The lipoidal matrix of the Stratum corneum has complex structural arrangement. The Stratum corneum is hygroscopic and requires at least 10% moisture by weight to maintain flexibility and softness. The hygroscopicity is attributable in part to the water holding capacity of keratin. The pH of the skin is normally between 5-6. This Acid mantle is due to the presence of these amphoteric amino acids, lactic acid, and fatty acids from the secretions of sebaceous glands.

Ayurvedic classification of skin

According to Sushruta

1. Avabhasini-1/8th of paddy grain -gives shine and seat of pigmentation-sidhma, Padmakantaka-kapha dominant
2. Lohita-1/16th of paddy grain-red in colour-blood vessels-tila, kalaka, vyanga-pitta predominant.
3. Shweta-1/12th of paddy grain-white in colour-seat of temperature control-adipose tissue charmadhara, charmadala, ajagallika, mashaka-kapha dominant
4. Tamra-1/8th of a paddy grain,copper red pigmentation-kilasa, kushta, visarpa-kapha pitta predominant.
5. Vedini-1/5th of paddy grain-seat of sense of touch-kushta, visarpa-vata,rakta dominant
6. Rohini-1 grain –growing and healing-granthi,apache,arbuda,shlipada,galaganda-rasa,rakta,sukra dominant
7. Mamsadhara-2 paddy-good shock absorber, bhagandhara, vidhradi, arsha-mamsadhatu, kaphadosha dominant

Transdermal Absorption:

Small lipid soluble molecules can partition into the Stratum corneum and then diffuse across the lipid bilayer membranes. But water soluble molecules particularly charged molecules cannot penetrate

significantly by this route. Pre-existing aqueous pathways associated with skin's appendages(sweat gland ducts and hair follicles)admit water soluble molecules and provides major route for iontophoresis.

Therapeutic Active Ingredients have Sukshma, Ashukari and Vyavayee properties.

They are of two types-Hydrophyllic and Lipophilic (Lipophilic ingredients penetrate better)

Percutaneous absorption involves the following sequences:

- Partitioning of the molecule into the SC from the applied vehicle phase→
- Molecular diffusion through the SC→
- Partitioning from the SC into viable epidermis and
- Diffusion through the epidermis and upper dermis and capillary uptake.
- Low levels of absorption are seen with large polar molecules like peptides.

Standardisation of Abhyanga technique

Abhyanga can be distinguished from other techniques of massage in terms of

- Magnitude of applied force- With moderate or less force

- Direction of force-Towards the direction of body hair on the limbs and circular movement on face and head.
- Duration of force-According to the patient strength and nature of disease pressure applied and released in split second by the movement action of masseurs hand.
- Means of application of force-Manual massage-Synchronised movement of hands of two masseurs for a particular span of time. Self massage or Swabhyanga is the area of interest in the fast moving world.
- Medicinal oil used-The therapeutic, aromatic and visual effect of the medicines applied gives proper impact. The temperature and viscosity of oil used plays a major role. The temperature of the oil used is maintained around 40-45 degree Celsius whichever is admissible according to the weather condition. A longer application of heat will cause burns especially in Pakshaghata patients as the sensory system may also be effected, hence continuous movement of hand of the masseurs is needed.
- Time and place of treatment-Early morning hours or late afternoons are considered ideal. The atmosphere created in the treatment room makes

the patient relaxed. The treatment table made of medicinal woods can also contribute to the patients wellbeing.

- Body part applied-Sarvangabhyanga, Siroabhyanga, Padabhyanga can be classified according to the part of the body involved.
- The main advantage of Abhyanga treatment is that it can be given as a complimentary therapy for the patients who are undergoing strict schedule of medicine intake and who do not want to be in the dilemma of assorting to a particular branch of medicine unknown to their beliefs.

CONTRA INDICATIONS FOR ABHYANGA

- Sushruta and Vagbhata have listed some contra indications
 1. No unmedicated oil should be used if indigestion (ama dosha) exists
 2. Abhyanga should be avoided when fever is present.
 3. Abhyanga should not follow emesis, purgatives, or niruha enema
 4. certain kapha aggravations contraindicate Abhyanga

Massage therapy- Definition and Classification

Massage is one of those terms, which are easily understood than expressed. No

uniform definition seems to exist. Massage or massage therapy can include systems of structured palpation or movement of the soft tissue of the body. The massage system may include, but is not limited to, such techniques as, stroking, kneading, gliding, percussion, friction, vibration, compression, passive or active stretching within the normal anatomical range of movement; effleurage (either firm or light soothing, stroking movement, without dragging the skin, using either padded

parts of fingertips or palms); petrissage (lifting or picking up muscles and rolling the folds of skin); or tapotement (striking with the side of the hand, usually with partly flexed fingers, rhythmic movements with fingers or short rapid movements of sides of the hand). These techniques may be applied with or without the aid of lubricants, salt or herbal preparations, hydromassage, thermal massage or a massage device that mimics or enhances the actions possible by human hands.

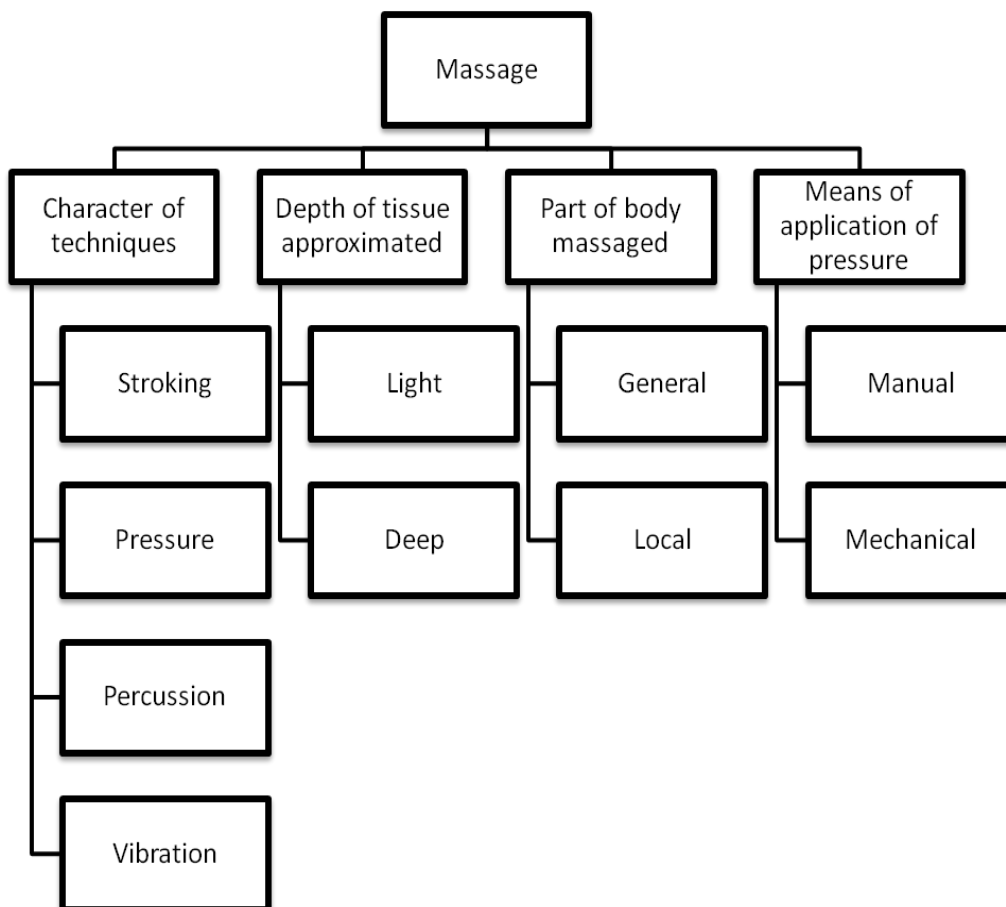


Table no:12 Table showing classification of Massage.¹⁵

The purpose of the practice of massage is to enhance the general health and well-

being of the recipient. Massage does not include the diagnosis of a specific

pathology, the prescription of drugs or controlled substances, spinal manipulation or those acts of physical therapy that are outside the scope of massage therapy.

Unique action of Abhyanga in the management of Pakshaghata

The main challenge for physiotherapist is they need to work against gravity. They advise passive and active movements against gravity to increase the muscle strength .where as in ayurvedic massage ,there is no compelling action against gravity by the physician and is in the Anuloma Gati as against opposite direction in modern massage. So the patient is more relaxed

In Abhyanga there is

- nervous stimulation
- correction of blood flow
- correction of lymphatic flow
- correction of nutrient supply to the tissues
- toning of muscle
- correction of vata effect

Power needed to apply for the massage

In Physiotherapy side there is no specification about the power needed to apply for massage,as they are more

concentrated on nervous stimulation, active and passive exercises. It is mentioned as the patient will be taking blood thinners in some cases and in the paresis or paralysis part, the patient won't be able to feel the pressure applied correctly ,caution have to be taken while massaging that not to cause any bruise or internal damage to the parts.

In Ayurveda (ayurvedic massage therapy by subhash Ranade) describes

Vata type people are very sensitive to touch so gentle massage with warm oil should be given. Massage should be done daily in the early morning or before a warm bath in the evening.

Massage strokes are given in the direction of away from the heart, up to 30 strokes per minute. This is the type of massage for hemiplegia as vata is predominant. Where as in pitta constitution, massage should be medium pressure, alternating away and then towards heart, up to 40 strokes per minute. And in Kapha constitution massage should be vigorous, deep with strokes towards the heart, up to 50 to 60 strokes per minute.

Swedish massage

In this type of therapeutic massage, therapists use a combination of 5 basic strokes all towards the heart- kneading,

rolling, vibrational, percussive, and tapping movements, with the application of oil, to reduce friction on the skin.

Traditional Massages

Other types of traditional massages are available in different part of world. Traditional Kalari Massage-a pressure application type one among them is famous among southern part of India.

Role of Massage in hemiplegia

The basic idea behind a massage therapy is; when there is hemiplegia the brain lost its touch with extremities, so after sometime brain co-ordinates all other functions excluding these areas. Thus there won't be an attempt from brain to activate these parts. So it is necessary from our part to stimulate these areas for the brain to include this in its functions.

- Deep tissue Massage is contraindicated in severe spasticity associated with Upper Motor Neuron Lesions as in Hemiplegia, but a lighter version like Abhyanga only involving a less force and superficial application of medicated oil can be used in a controlled manner.

DRUG REVIEW

According to Ayurveda, the success of Chikitsa depends upon four factors called Chikitsa Chatushpada. Among these four factors of treatment, Dravya has been designated the second place. An ideal drug is said to have properties like Bahukalpam (many recipes can be prepared), Bahugunam (possess many good qualities), Sampannam (with excellent pharmacological properties) & Yogyam (having quality to alleviate the target disease).

Defined as the article that reverses or break the Samprapti without producing any side effects has been looked upon as ideal drug. Secondly, there was, is and will be a demand for short and sweet therapy for the disease. Ayurvedic literature contains infinite number of herbs. Their action has been explained on the basis of theory of Rasa, Guna, Virya, Vipaka and Prabhava. The right choice for described disease plays for vital role in the treatment of the particular disease. After the Physician (Chikitsaka) drugs has second place in Chikitsa Chatushpada.

SELECTION OF THE DRUGS

Narayana Taila is indicated for Pakshaghata in Sahasrayoga. Murchhita Tila Taila is also found to be useful in

treating Vata rogas in Bhaishajya Ratnavali.

PREPARATION OF THE DRUGS

Grouping Patient of Pakshaghataare randomly divided in two groups & treated as follows-

Grouping Drug:

Group A - Narayana Taila

Group B - MurchhitaTila Taila

- The formulations used for the clinical assessment in the present dissertation work is taken from the book Sahasrayoga and Bhaishajya Ratnavali respectively.

The word 'Sneh' is derived from the root 'Snih' which has two meanings, one being 'Snihyathe' means 'to render affection' and the other 'Snih Snehane' means 'to render lubrication.' Snigdha guna constitutes a major portion in the making and balancing of our structural and functional aspect of the body. Kapham and pitta are majorly made of this snehaguna. Rasa, rakta, mamsa, medha, majja, sukra and even ojas is made of snehaguna. Upadhatu vasa, stanya and arthavam are snehayukta. Mala purisha, mutra and swedam are also snehatukta. In the concept of srusti of the sareera (creation of life), the important constituents sukra, shonita

also contain sneha. Because of the various above reasons Susruta has rightly called body as a sneha sara. "snehasroayam purusha pranashchasnehabhuyista.." S.S.chi 31.

On the basis of mode of administration snehanais classified into,

Abhyantara- Pana, Anuvasana, Uttarabasti, Bhojana.

Bahya- Abhyanga, Shirobasti, Gandusha, Karnapurana, Mastishkya, Lepa etc

According to sub-types of BahyaSneha :

Abhyang, Lepa, Uudvartana, Mardana, Parisheketc are the sub-types.

a) Abhyanga – snehanain the direction of Loma i.e. away from heart in downward direction.

It is said to be jara-shram-vatahar, drusthiprasadak, pushtikar, causes sound sleep andnourishes the skin.

b) Lepa – Pralep, pradehaand aalepaare its varities. It may be cold or hot with differencein the thicknesses.

c) Udvardana– It is either rookshaor snigdha. Here the medicine is in the form of drypowder or snehakalkawhich is massaged vigourously opposite the direction of Loma i.e. towards the Heart.

d) Mardana – Massage with more pressure using oil.

e) **Padaghat**– It is described by Vaghbhat. Initially oil is applied all over the body and then the body is pressurized in fixed direction with the sole.

f) **Samvahana**– It means gentle application of oil without any pressure.

Vegetable fats like Tila Taila are superior to animal fats because they contain more polyunsaturated fatty acids (PUFA) & vegetable fats are less likely to undergo oxidation (rancidity) due to the presence

of anti-oxidants(text book of Bio-chemistry by Chaterjee& Shinde)

SNEHAPAKA

General method of Preparation is Kalka: Sneha: Drava=1:4:16. Saveeryathaavadhi is 16 months. Snehapaka should always be carried out in Mandagni. If Godugdha, Dadhi, Mamsarasa, takra are the Drava dravya, kalka should be 1/8th to that of the Sneha and addition of 4 parts of water to complete the extraction of active principle and avoid charring of the ingredient.

Table no: 15 NARAYANA THAILAM Ingredients

Required Quantity of ingredients for making 1 litre Narayana Taila.

Table no: 15 (a) Ingredients for Kashaya 160 grams of each drugs for making kashaya

DRUGS	BOTANICAL NAME	QUANTITY
Bilva	Aegle marmelos	480gms
Agnimantha	Premnamucronata	-do-
Shyonaka	Oroxylum indicum	-do-
Patala	Stereospermumsuaveolens	-do-
Paribhadra	Erythrina variegata	-do-
Prasarini	Paedariafoetida	-do-
Brihati	Solanum,indicum	-do-
Kantakari	Solanum xanthocarpum	-do-
Ashwagandha	Withaniasomnifera	-do-
Bala	Sida cordifolia	-do-
Atibala	Abutilon indicum	-do-
Shvadamshttra	Tribulus terrestris	-do-
Punarnava	Boerhaaviadiffusa	-do-

- Water for decoction – 16 litres, boiled and reduced to 4 litres and added with

TilaTaila – Sesame oil	Sesamum indicum	1 litre
Drava Dravyas used:		
Shatavari rasa	Juice extract / water decoction of	1 litre

	Asparagus racemosus	
Goksheera	Cow milk / goat milk	4 litres

Table no 15 (b): Ingredients for Kalka

DRUGS	BOTANICAL NAME	QUANTITY
Shatapushpa	Anethum sowa	32gms
Devadaru	Cedrus deodara	-do-
Mamsi	Nardostachysjatamansi	-do-
Shaileyaka	Convolvulus pluricaulis	-do-
Vacha	Acorus calamus	-do-
Chandana	Pterocarpus santalinus	-do-
Tagara	Valeriana wallichii	-do-
Kushta	Saussurealappa	-do-
Ela	Elettaria cardamomum (cardamom)	-do-
Mashaparni	Teramnus labialis	-do-
Mudgaparni	Phaseolus trilobus	-do-
Shalaparni	Desmodiumgangeticum	-do-
Prishnaparni	Urariapicta	-do-
Rasna	Pluchea lanceolata	-do-
Turagagandha	Withaniasomnifera	-do-
Saindhava Lavana	Rock salt	-do-
Punarnava	Boerhaaviadiffusa	-do-

- 32 grams of fine powder of each of following, except Saindhava Lavana added as Kalka. Saindhava Lavana added as Paatrapaka. For Abhyanga, Khara paka is achieved by two days of Sneha paka over Mandagni.

- **Taila Murchanam**

It is interesting to note that in the ancient texts –Brihat trayee and Laghu trayee there were no suggestions about the preliminary treatment of Murchana, which however seems to have introduced sometimes later in Bhaishajya Ratnavali.

Table no 16 MurchhitaTilataila –ingredients

DRUGS	BOTANICAL NAME	QUANTITY
Manjishta	Rubia cordifolia	62.5gms
Haridra	Curcuma longa	15.6gms
Lodhra	Symplocosracemosa	-do-
Nalika	Cinnamomum zeylanicum	-do-
Amalaki	Embliaofficinalis	-do-
Haritaki	Terminalia chebula	-do-
Vibhitaki	Terminalia belerica	-do-
Ketaki	Pandanus odoratimimus	-do-

1 litreTila Taila is heated over mandagni till the foam is subsided. Above mentioned drugs are made into coarse powder form and converted into kalka by adding little amount of water,Thenkalka and 4 litres of water is added into the Tila Taila and heated till it gets the Taila Sidha Lakshana. Afterwards Taila is filtered out of the vessel.

TAILA:(Tila Taila) Sesamum indicum

PROPERTIES:

Rasa: Madhura

Anurasa: Tikta, Kashāya

Guṇa: Teekshṇa, Guru, Snigdha,

Veerya: Ushṇa

Vipāka: Madhura.

Karma: VātaKaphĀhāra, Pittakara, Balakara, Varnakara, Mardava Kara, Tvachya,

Krimighna, Garbhashaya Shodhaka, Bhagna Sandhanakara, it Subsides Shula in Yoni, Shira and Karna.

Seasonal indication: Pravrt, ŚeetaKāla

Suitable condition for use of Taila:

(Cha.Su.13/15; Cha.Su.13/44, 46; A.H.Su. 5/55-56; A.H.Su.16/9; Cha.Su. 27/277; Su.Su.45/113 and Ka.Su.22/7).

-Vāta Prakriti, Pravridha Śleshma Medaska, Chala Sthūla Gala Udara, Taila Sātmya, VātaVyādhi, KrimiKosh_tha, Nadivrna, Bhagna, KruraKoshṭha , those desires of Strength, Tanutva, Laghutā.

Other formulations for Abhyanga in Pakshaghata

MaashaTaila by Yogaratnakara and Grandhikaadi Taila by Vidyachintamani are the special drugs advised for Abhyanga in Pakshaghata. Bala Thailam, Prabanjana Vimardanam Tailam, Prasarinyadi Tailam, Karpasathyadi Tailametc are also used for Abhyanga in Pakshaghata.

Investigational Agent

The clinical study is an attempt made to analyze the role of Abhyanga in Pakshaghata. Though used as Poorvakarma for Panchakarma therapies, in many Vataja diseases Abhyanga is used as Pradhana Karma- as it imparts local treatment directly to the afflicted part. The formulation used for the clinical assessment is taken as follows.

1. Narayana Taila (Sahasrayoaga) according to AFI guideline
2. MurchhitaTila Taila (Bhaishajya Ratnavali)

As the disease sometimes requires a longer period of treatment, Abhyanga which can be done with comparative ease can provide a physical and psychological support for the patient. Taking into account the exercise effect and the aroma effect of Abhyanga, it was thought to be more beneficial in the rehabilitative aspects of Pakshaghata treatment.

SUBJECT SELECTION

Inclusion criteria:-

- Patients presenting with classical signs & symptoms of Pakshaghata like Chesta nivruthi, Ruja, Vaksthamba, SharirardhaVichetanam, Sira snayuvishosa, Sandhibandhana

Vimoksha, Murchha, shaitya, shotha, Guruta, kampa etc.

- Patients' age group 18 to 80 years irrespective of sex, religion, socioeconomic status & occupation will be taken.
- Patients who are fit for Abhyanga.

Exclusion criteria:-

- Marked mental impairment and patients having bed sores.
- Chronicity more than 3 year.
- Comatose & unconscious patient.
- Intracranial infections such as meningitis etc.
- Space occupying lesions of brain such as tumors etc. and traumatic conditions.
- Congenital defects.
- Patients who are suffering with hemorrhagic disorders like Thalassemia, Haemophilia etc.
- Patients who are unfit for Abhyanga.

Laboratory Investigation

All the patients will be subjected to Complete Blood Count,

- Lipid Profile
- ESR
- Blood urea
- Serum creatinine
- Blood sugar
- CT SCAN if necessary.

- Laboratory investigations will be conducted at identified reputed laboratories or Government institutes.

Study Design

- This study is comparative study
- The randomly selected patients will be divided in to two groups of 20 patients each.
- It is single blind study

Treatment regimen

Medicines will be administered for 20 patients each in two groups, Group A or Test Group and Group B or standard group. See Table no: 17 INTERVENTION CHART

Treatment Procedure

The simple procedure of massaging the whole body with Narayana Taila in Group A and MurchhitaTila Taila in Group B, in an ‘Anuloma Gati’ i.e. Towards the orientation of hair in the body. Patient is made to wear minimum dress covering the private parts and Abhyanga done on the Panchakarma table inside the Panchakarma room with the help of two experienced messieurs doing Abhyanga in a synchronized manner. The nature of pressure applied was of mild type. Here direction of massaging is quite opposite to the one carried out in Udwartana. The pressure applied is different from that of Mardana and Samvahana.

Table no:17 INTERVENTION CHART

Sl.No:	Procedure	Medicated Oil used for Abhyanga	Duration and time of Abhyanga treatment	Quantity of the Oil used	Temperature of the Oil used
1	Group A - Abhyanga	Narayana Taila	40-45 mts for 7 days at 7 am	200ml	40-45 degree celsius
2	Group B - Abhyanga	MurchhitaTila Taila	40-45 mts for 7 days at 7 am	200ml	40-45 degree celsius

A total of 200ml of Abhyanga Taila is taken every time. Massage was done in all following five consecutive postures with a total duration of 45 minutes and is carried out for 7 days as;

1. Sitting - 5 min
2. Supine - 10 min
3. Left lateral - 10 min
4. Right lateral - 10 min
5. Sitting - 5 min

After procedure patient is asked to take rest for about 15 minutes and then allowed to take bath with warm water and soap.

Assessment

The full details of the history and physical examination of the patients will be recorded as per the case proforma prepared for the purpose.

The study will be of 2 weeks duration

- Efficacy of the treatment will be assessed by adopting the scoring method for the signs and symptoms as explained in the case proforma which are recorded before and after the course of study.
- There will be two follow ups in both groups in the 2 weeks duration of study
- 1st Follow up-on the 7thday(the last day of treatment)

- 2nd Follow up- on the 14thday (after 7 days of complete rest following the treatment.)

Assessment will be done with the help of clinical parameters. Results will be statistically analyzed.

Assessment criteria

The improvement in the patients will be assessed on the basis of the criteria given below

Subjective parameters:

- Daurbalya
- Ruja
- Gaurava
- Daha
- Vibandha

Objective parameters:

- Reflexes
- Gait
- Loss of speech
- Muscle tone
- Muscle power
- Range of movement of limbs, joints & fingers
- Drooping of wrist/Foot
- Depression

Statistical Plan

- Sample size: 40

- No. of groups: 2 groups (Group A & Group B)
- No. of patients in each group: 20
- Level of study: IPD and OPD
- Type of study: Randomized single blind comparative study.
- Source of Data: 40 patients of clinically diagnosed cases of Pakshaghata will be selected on the basis of inclusion criteria from the IPD and OPD of MIAMS, Manipal.

The case proforma prepared for the purpose is the primary data collection instrument for the study.

Detailed clinical history will be taken and patients will be thoroughly examined as per the case proforma prepared for the purpose.

- Paired and unpaired T test will be used for the assessment.

Comparative Results of Subjective Parameters of Group-A and Group-B

Characteristics	Group-A			Group-B		
	Mean score		Percentage of relief	Mean score		Percentage of relief
	BT	FU		BT	FU	
Karmakshaya	2.45	2.40	2	2.45	2.45	0
Karmahani	2.95	2.65	10	2.10	2.10	0
Vichetana	2.45	2.40	2	2.45	2.45	0
Daurbalya	1.55	1.45	6	1.40	1.40	0
Ruja	2.60	1.80	31	2.10	1.95	7
Shrama	0.95	0.95	0	0.85	0.85	0
Bhrama	2.20	2.20	0	1.95	1.95	0
Sandhibandhavimoksha	2.85	2.15	25	2.2	1.8	18
Toda	2.95	2.65	10	2.10	2.10	0
Vaksthamba	2.75	2.75	0	2.10	2.10	0
Sankoja	1.9	1.9	0	1.9	1.9	0
Depression	2.85	2.15	25	2.20	1.95	11
Sotha	1.9	1.9	0	1.95	1.95	0
Vibandha	2.85	2.15	25	2.25	1.95	13

Result of group A

The percentage of improvement in Group A on Karmakshaya is 2%,Karmahani 10%,.Vichetana is 2%, Daurbalya is 6%, Ruja is 31%, Shrama unimproved, Bhrama is unimproved, Sandhibandhavomoksha 25%, Toda is 10%, Vaksthamba, Sankoja unimproved ,Depression is 25%, Sotha unimproved and Vibandha is 25%.,

Result of group B

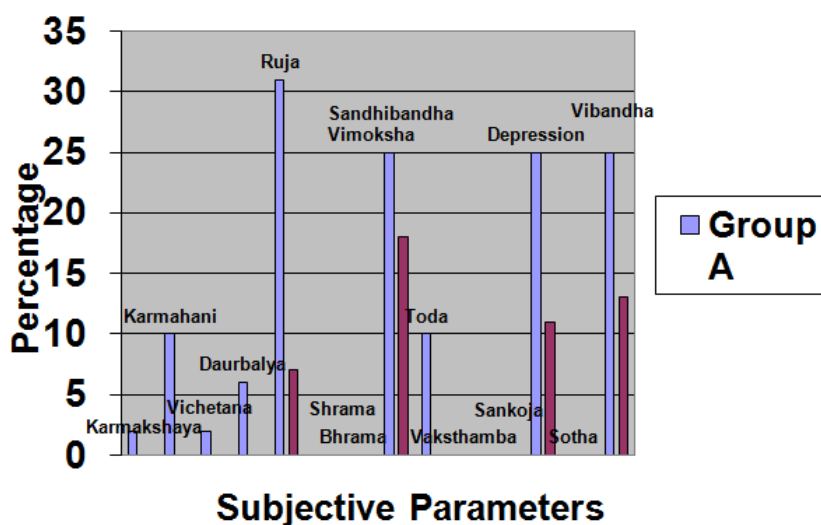
The percentage of improvement in Group B on Karmakshaya and Karmahani unimproved. Vichetanais unimproved, Daurbalya is unimproved, Ruja is 7%, Shrama is unimproved, Bhrama is unimproved, Sandhibandhavimoksha is 18%,Toda is unimproved,, Vaksthamba and Sankoja unimproved, Depression is 11%, Sotha unimproved and Vibandha 13% improved,

Table no: Comparative results of Subjective parameters of Group-A and Group-B

Group A	Group B	Mean Difference	SE (±)	T value	P value
3.7	0.9	2.8	1.93	4.75	<0.001

In case of Pakshagata, in Subjective parameters, Group a overall result is 3.7 and Group B overall result is 0.9. Here Group A of Abhyanga with Narayana Taila shown highly significant improvement compare to Group B i.e. Abhyanga with MurchhitaTila Taila; which proves the higher medicinal effect of Narayana Taila.

Graph no: 44 Comparative Results of Subjective Parameters of Group-A and Group-B



Results of Objective Parameters

Characteristics Parameters	Group-A			Group-B		
	Mean score		Percentage of relief	Mean score		Percentage of relief
	BT	FU		BT	FU	
Biceps Reflex	1.55	1.45	6	1.4	1.3	7
Triceps Reflex	2.45	2.40	2	2.45	2.45	0
Brachioradialis Reflex	0.90	0.90	0	0.90	0.90	0
Knee Reflex	2.45	2.4	2	2.45	2.45	0
Ankle Reflex	1.90	1.90	0	1.95	1.95	0
Finger Movement	2.95	2.95	0	2.85	2.80	2
Muscle Strength Upper limb	1.55	1.45	6	1.40	1.30	7
Muscle Strength Lower Limb	2.10	1.95	12	2.60	1.80	31
Muscle Tone	2.95	2.95	0	2.95	2.95	0
Drooping of Wrist	1.55	1.45	6	0.85	0.85	0
Lifting of hand at shoulder	1.40	1.30	7	1.95	1.95	0
Lifting of leg at hip	2.10	1.95	12	1.55	1.45	6
Sitting from lying down	2.85	2.15	25	2.2	1.95	11
Walking	2.95	2.65	9	2.60	1.80	31
Best Gaze	0.95	0.95	0	0.95	0.95	0
Facial Expression	0.95	0.95	0	0.95	0.95	0

Result of Objective Parameters of Group A

The percentage of improvement in Biceps Reflex is 6%,that in Triceps Reflex is 2% ,in Brachioradialis Reflex is 0 % ,in Knee Reflex is 2 % ,in Ankle reflex is 0 % ,in Finger movement is 0%,in Muscle strength upper limb is 6%,in Muscle strength in lower limb is 12%,in Muscle Tone is %,in

Drooping of wrist is 6%,Lifting of hand at shoulder is 7%,in Lifting of leg at hip is12 % ,in Sitting from lying down is 25%,in Walking is 9%,inBest Gaze is 0%,in Facial expression is0 %

Result of Objective Parameters of Group B

The percentage of improvement in Biceps Reflex is 7%,that in Triceps Reflex is 0 ,in Brachioradialis Reflex is 0% ,in Knee Reflex is 0 %,in Ankle reflex is 0 %,in Finger movement is 2%,in Muscle strength

upper limb is 7%,in Muscle strength in lower limb is 31%,in Muscle Tone is 6%,in Drooping of wrist is 0%,Lifting of hand at shoulder is 0%,in Lifting of leg at hip is 6%,in Sitting from lying down is 11%,in Walking is 31%,in Best Gaze is 0%,in Facial expression is 0 %

Graph no: 61 -Graph showing comparative results of Objective Parameters of Group A and Group B

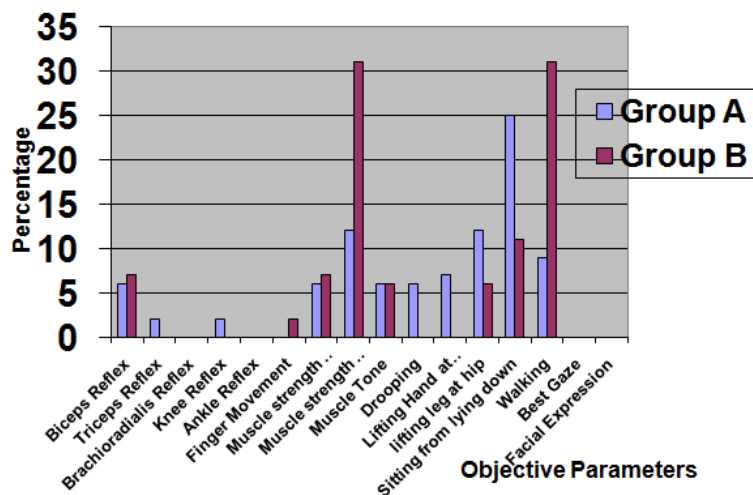


Table no: 112 Comparative results of Objective Parameters of Group-A and Group-B

Group A	Group B	Mean Difference	SE (±)	T value	P value
1.8	2.2	0.4	0.067	1.00	>0.05

In case of Pakshagata,in the Objective parameters, Group A overall result is 1.8 and Group B overall result is 2.2 Here Group A and Group B does not show any Statistically significant result.(P>0.05)

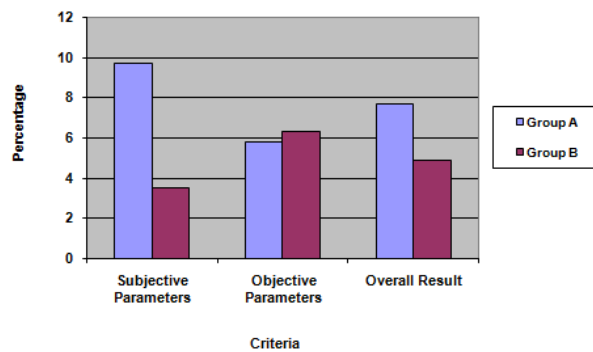
Table no: 113 Overall Comparative results of Group-A and Group-B

Group A	Group B	Mean Difference	SE (±)	T value	P value
5.5	3.1	2.4	0.078	1.00	>0.05

Though Subjective results are showing characteristic significance, overall comparative results of both Subjective and Objective parameter studies of Group A and Group B taken together shows no

statistically relevant comparison to be made. It proves that the results are fluctuating and needs a greater population include for making it dependable.

Graph no:62 -Graph showing Overall Comparative results of Group-A and Group-B



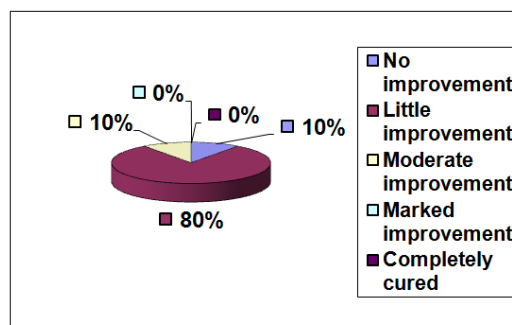
ASSESSMENT OF TOTAL EFFECT OF THERAPY

Overall effect of Abhyanga with Narayana Taila in Group-A

Table no: 114 Overall effects in Group A

EFFECT OF TREATMENT IN GROUP - A		
Class	Grading	No of patients
0	No improvement	2
1-30%	Little improvement	16
31%-60%	Moderate improvement	2
61%-99%	Marked improvement	0
100%	Completely cured	0

Graph no:63 Result in Group A

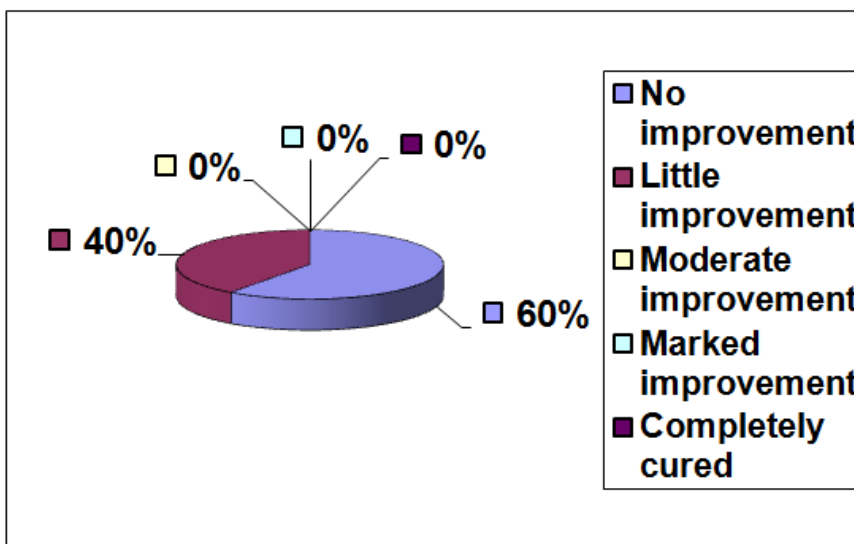


Effects of Abhyanga with MurchhitaTila Taila in Group-B

Table no:115 Overall effect in Group-B

EFFECT OF TREATMENT IN GROUP - B		
Class	Grading	No of patients
0	No improvement	12
0-30%	Little improvement	08
31%-60%	Moderate improvement	0
61%-99%	Marked improvement	0
100%	Completely cured	0

Graph no: 64 - Result in Group B



40 Patients having the signs and symptoms of Pakshaghata which fulfilled the inclusion criteria of present study were taken and randomly placed under 2 Groups. 20 patients were treated in Group A with Narayana Taila Abhyanga and 20 patients were treated in Group B with MurchhitaTila Taila for 7 days. After completion of the study the following are the conclusions drawn.

OBSERVATION

- Total number patients were 40; among them 42.5% of the patients had Karmahani symptoms
- In this study, 42.5% of the patients gave history of since 6-12 months chronicity with 70% of negative family history.

- 70% of the patients had no exercise which would cause Medo dushti of the total 40 patients, 57.5 % was of the age group 51-60 yrs...
- In the present study, 75% had stressful nature of work showing Sharirika and Manasika cause of the Vata Pradhana Pakshaghata disease.

RESULTS

Effect of treatment on Comparative Subjective parameter results of Group-A and Group-B

In case of Pakshaghata, Group A Subjective result is 9.7% and Group B overall result is 3.5%. Analysis of this data shows Group A i.e. Abhyanga with Narayana Taila shows statistically significant ($P < 0.01$) improvement than that of Group B i.e. Abhyanga with Murchhita Tila Taila

Effect of treatment on Comparative Objective parameter results of Group-A and Group-B

In case of Pakshaghata, Group A Objective result is 5.8% and Group B overall result is 6.3%. Analysis of this data shows Group A i.e. Abhyanga with Narayana Taila shows statistically insignificant ($P > 0.05$) similar results with that of Group B i.e. Abhyanga with Murchhita Tila Taila.

Effect of treatment on Comparative overall results of Group-A and Group-B

In case of Pakshaghata, Group A overall result is 7.75% and Group B overall result is 4.9%. Analysis of this data shows Group A i.e. Abhyanga with Narayana Taila shows statistically insignificant ($P > 0.05$) similar results with that of Group B i.e. Abhyanga with Murchhita Tila Taila.

CONCLUSION

Overall improvement of parameters assessing Pakshaghata treatment was noted following Sarvanga Abhyanga treatment with gentle massage pressure using both Narayana taila and Murchhitatila taila; although statistically significant relief was noted only for subjective symptoms. Thus it was concluded that Abhyanga treatment with gentle massage pressure was an effective treatment modality for improving weakness from Pakshaghata. Abhyanga with Narayana taila was found to be better than Murchhitatila taila in patients with Pakshaghata and it resulted in statistically significant symptom relief.

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