ejpmr, 2021,8(10), 561-565

SJIF Impact Factor 6.222

EUROPEAN JOURNAL OF PHARMACEUTICAL AND MEDICAL RESEARCH

www.ejpmr.com

Review Article

ISSN 2394-3211

EJPMR

ANATOMICAL ASPECT OF PADABHANGYA AND IT' S EFFECT ON CENTRAL NERVOUS SYSTEM

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Article Received on 15/08/2021 **Article Revised on 08/09/2021** **Article Accepted on 28/09/2021**

ABSTRACT

Ayurveda is aimed in prevention and cure of physical and mental health. In Ayurveda *Dinacharya* is one of the concept which helps to fulfill this aim of Ayurveda. Vitality enhancing technique which is incorporated in massage of the feet is called *Padabhyanga*. It is one of the prophylactic principles mentioned in Ayurvedic *Dincharya*. *Pada* is a basic site of *vata dosha*, vitiation of *vata dosha* causes 80 types of *nanatmaja rogas* . Central Nervous System can be correlated with the *Vata Nadi sansthana* or *Chetna Samstahan*. Now a day due to hectic schedule and changing life style most of the people are under stress which gives rise to various physical as well as mental disorders. *Padabhangy* helps to reduce the stress, anxiety, insomnia and also helps to cure various psychological disorders.

INTRODUCTION

The prime aspiration of Ayurveda ia *Swasthasyasvastsya rakshnam* and aturasvikarprashaman[1] So to avert ailments they prefer several principal in that one is *Dincharya*. In *dincharya Abhyanga* is the procedure to massage whole body with oil which helps in maintaining, caring, to rejuvenate, to improve blood circulation, strength to body, and also have cosmetological effect on the largest sense organ i.e. skin.[2] According to season and condition of climate vasodilatation and vasoconstriction of skin takes place which has effect on inner tissues of body. Vitality enhancing technique which is incorporated in massage of the feet is called *Padabhyanga*.[3] It is one of the prophylactic principles mentioned in Ayurvedic *Dincharya*.

The hectic computerized life style, Faulty food habits, stress and strain, irregular sleeping habits and negligence in following daily and seasonal regimen leads to many physical as well as psychological disorders. By doing *Padabhyanga*, *kharatwa*, *Stabdata*, *Rukshata*, *Shrama*, *Suptata* of *pada* relieved and *bala* and *sthairya* improvement is seen.[4] The effect of *Padabhangya* is also seen on central nervous system. *Padabhyanga* helps to reduce stress which is one of most common cause of many diseases.

The science of reflexology states that the sole of feet is connected to various organs of body. According to these science organs such as a heart, lungs, kidney, brain and intestine can be stimulated by foot massage.[5] Hence feet massage i.e. *padabhangya* helps in controlling the diseases like hypertension, Diabetes, Digestive system disorders etc.

Anatomy of foot.[6,7]

The foot is traditionally divided into three regions: the hindfoot, the midfoot and the forefoot. Additionally, the lower leg often refers to the area between the knee and the ankle and this area is critical to the functioning of the foot.

The Hindfoot begins at the ankle joint and stops at the transverse tarsal joint. The bones of the Hindfoot are the talus and the calcaneus.

The midfoot begins at the transverse tarsal joint and ends where the metatarsals begin i.e. tarsometatarsel joint. The five bones of the midfoot comprise the navicular, cuboid, and the three cuneiforms.
The Forefoot is composed of the metatarsels, phalanges, and the sesamoids.

COLUMNS OF THE FOOT

1. Medial column – mobile and consist of the talus, navicular, medial cuneiform 1st metatarsal and the great toe.
2. Lateral column – is stiffer and includes the calcaneus, cuboid and the 4th and 5th metatarsels.

ARCH OF FOOT

The foot has three arches: 2 longitudinal (medial and lateral) arches and 1 anterior arch. Their shape allows them to act in the same way as a spring, bearing the

weight of the body and absorbing the shock produced during locomotion. The flexibility conferred by the foot by these arches facilitates functions such as walking and running.

A. Longitudinal arches
1. Medial Arch- Formed by the calcaneus, talas, navicular, three cuneiforms and first three metatarsal bones.
2. Lateral Arch – Flatter and lies on the ground in the standing position. It is formed by the calcaneus, cuboid and 4th and 5th metatarsal bones.

B. Transverse Arch – Located in coronal plane of the foot, formed by the metatarsal bases, the cuboid and the three cuneiform bones.

Plantar aponeurosis – It is the modification of deep fascia, which covers the sole. It is a thick connective tissue that functions to support and protect the underlying vital structures of the foot. The fascia is thick centrally, known as aponeurosis and is thin along the sides. The fascis consist of three parts, medial, lateral and the central respectively.

Joints
A joint is formed at the junction between two or more bones. Each big toe has two joints, the metatarsophalangeal joint and the interphalangeal joint. The othe four toes on each foot have three joints each: the metatarsophalangeal joint at the base of the toe, the proximal interphalangeal joint in the middle of the toe, and the distal phalangeal joint – the joint closest to the tip of the toe.

Muscles
The muscles that control the movements of the foot originate in the lower leg and are attached to the bones in the foot with tendons. These are threc main muscles that facilitate movement in the foot:
- Tibialis posterior
- Tibialis anterior
- Peroneus longus and brevis
- Extensors
- Flexors

Tendons and Ligaments
The most notable tendon of the foot is the Achilles tendon, which runs from the calf muscle to the heel. It is the strongest and largest tendinous structure in the body. The Achilles tendon makes it possible to run, jump, climb stairs, and stand on your toes.

Other important tendons in the foot include the tibialis posterior (posterior tibial tendon), which attaches the calf muscle to the bones on the inside of the foot and supports the arch of the foot, and the tibialis anterior (anterior tibial tendon), which runs from the outer tibia to the first metatarsal and surface of the median cuneiform tarsel, which allows for dorsiflexion.

Ligaments
1. Plantar fascia – The longest ligament of the foot, the plantar fascia runs along the sole of the foot from the heel to the toes to form arch of the foot, provide strength for walking and assisting with balance
2. Plantar calcaneonavicular ligament – This is a ligament of the sole of the foot that connects the calcaneus and navicular and supports the head of the talus.
3. Calcaneocuboid ligament – This is the ligament that connects the calcaneus and the tarsal bones and helps the plantar fascis to support the arch of the foot.

PADABHYANGA
Procedure
Requirements
Abhyanga table, medicated oil based on the condition of the patient, warm water, water bath for heating oil, a towel.

Preparation of the Subject
Ideally, the routine practice of *Pada abhyanga* for a healthy person should be in empty stomach before bath.

Position of the Subject
The subject is asked to be lying in supine position on the table. A pillow is kept under the legs so that the subject is comfortable.

Purva karma
Draping: The subject is covered with a sheet, leaving only the lower legs exposed.
Cleaning: The feet are wiped with a towel dipped in warm water.

Pradhana karma
All movements are described for one foot. After all the steps are finished on one foot, the same should be followed on other foot Procedures were carried out in supine, lateral, and prone position of patient.
- Apply the oil to one of the feet for lubrication.
- Start with gently rubbing to the base of great toe squeezing with thumb with continuation of next toe.
- Allow proper pressure and massage with using palms and thumb of hand.
- Next apply slight pressure and oil in between toes.
- Stretch and pull the big toe gently and rub each side of nails.
- Now, next massage to base at Calcaneous region in circular motion with gentle pressure.
- Also allowed massage and apply oil on dorsum of foot along ankle joint in circular and linear pattern respectively.
- During massage used each step like Stroking, Ankle Rotation, Pivoting, Kneading, Finger walking, Pulling and Squeezing, Sliding and Arch pressure has to be given

Paschath karma

Wipe the feet with a warm, damp towel. The subject is asked to rest for 15 to 30 minutes, and then wash his feet with hot water.

Duration: 15min for each foot.

Oil -- 5-10 ml of oil for each foot.

Importance of *pada abhyanga*[8]

Effect of *Pada abhyanga* is not only depends on selection oil but also depends on karma or performance of *padaabhyanga* with suitable technique.

- *Kharatwa* - clears the roughness of the soles
- *Stabdata* - cures stiffness
- *Rukshata* – corrects excessive dryness of feet
- *Shrama* – relieves exhaustion of feet
- *Suptata* of *Pada* - cures numbness of feet
- *Bala*, *Sthairya* - promotes strength of the feet
- *Drustiprasaadakara* - Nourishment to eyes
- It prevents *Grudrasi vaata*, *Pada sputana*, *Sirasnaayu sankocha*.
- *Druda indriyata – Svakaaryakarana kshamaan indriyaaniyasyasaha*.

***Pada Abhyanga* and *Marmaparipaalana*[9]**

- *Pada* gives *Ashraya* for following *Marmas*
- *Kshipra –Kaalantara praanaharamarma*
- Anatomical structure involved- Posterior tibial nerve, dorsal metatarsal artery, Plantar arch and medial plantar artery, Metatarso phalangeal joint.
- *Talahridaya – Kaalantara pranaharamarma*
  Anatomical structure involved- Plantar arch artery and tributaries of Cephanous vein.
- *Kurcha -Vaikalyakaramarma*
  Anatomical structure involved- Medial planter nerve, medial Planter and Dorsal Metatarsal and Arcuate arteries.
- *Kurchashira – Snaayumarma*
  Anatomical structure involved- Peroneous bravis and longus muscles, Peroneal artery and tributaries of Short Cephaneous vein, Peroneal nerve.
- *Gulpha – Vaikalyakar Marma*
  Anatomical structure involved- Posterior tibial nerve, Posterior tibial artery and vein
  In most of all *Marmaviddha* condition, *Abhyanga* is one of the effective line of treatment.

Due to *padabhangya* it gives stimulation to *marma* and structures related to it. Stimulation to posterior tibial nerve gives stimulation to sciatic nerve and reduces the symptoms of Sciatica. Stimulation to Cephanous vein reduces the symptoms of varicose veins etc. Massage to *Gulpha Sandhi* gives refief from joint pain, Calcanous spour etc.

***Padabhangya* and Central Nervous System**

The nervous system is a complex network of nerves and cells that carry messages to and from the brain and spinal cord to various parts of the body. The nervous system includes both the Central nervous system and Peripheral nervous system. Our nervous system collects and processes information from the senses via nerves and the brain, and tells the muscles to contract – which causes physical actions. The nerves also innervate (supply an organ or other body part) muscles and gives it tone. *Pada* is a basic site of *vata dosha*, vitiation of *vata dosha* causes 80 types of *nanatmaja rogas*. Central Nervous System can be correlated with the *vata Nadi sansthana* or *Chetna Samstahan*. According to Ayurveda all the functions are performed under the control of *vata dosha*. By the means of *Padabhyanga* we can get control over *vata dosha*.

The following lists the benefits and positive effects of *padabhangya* on the body's nervous system

1. Generalized relaxation response from massage helps reduce strain on the nervous system. The relaxation response includes decrease in heart rate and decrease nerve firing.
2. Massage helps in the reduction of pain.
3. Massage helps increase our parasympathetic response, which may help with insomnia.
4. The reduction of fascial and muscular tension as well as reduction of joint stiffness from a massage can release impingement of peripheral nerves.
5. Massage also helps reduce musculoskeletal signs and symptoms of various disease states (Cerebral Palsy- reduce spasticity, Encourage muscle flexibility, encourage motor function, increases range of motion, Parkinson's disease- relieve muscle stiffness and rigidity, reduces stress, Buergers Disease- provides warmth and help to improve circulation, reduces emotional stress and other hyper/ hypotonicity syndromes and disease states).
6. Massage helps reduce the body's time spent in "sympathetic overdrive". The body's sympathetic nervous system is responsible for the "fight or flight" response. It is activated when our body perceives stress. It reduces blood flow to the brain, extremities, and digestive organs in preparation for a perceived survival situation. When a person is constantly stressed, their nervous system can be tilted into the state of sympathetic overdrive. If this only happens occasionally, the system usually has the resilience to recover. However, if the body is in a state of sympathetic overdrive, elevated levels of cortisol, the stress hormone, can lead to further damage to these tissues.

Reflexology[11]

The most used, abused, and neglected part of the body is our feet. They are always in motion and over time can make us miserable with annoying pain and discomfort.

Reflexology foot massages relieve stress and built up tension. Adding this to your personal health and wellness plan will advance your efforts to live a healthier and less stressed lifestyle.

Reflexology is a treatment based on the principle that there are areas and points on the feet, hands, and ears that are connected through the nervous system to corresponding parts of the body. When pressure is applied to these areas end points it stimulates the movement of energy along the nerve channels and help to restore homeostasis balance in the body.

What Is Reflexology Good For?

When applied by professionals, this ancient form of massage is able to aid in several aspects of relaxation, improved wellness, and pain relief.

1. Encourages Relaxation
2. Promotes Nervous System Stimulation
3. Relieves Migraines and Headaches
4. Revitalizes Nerve Function
5. Improves Circulation
6. Increases Energy Levels
7. Relieves Planter Fascitis

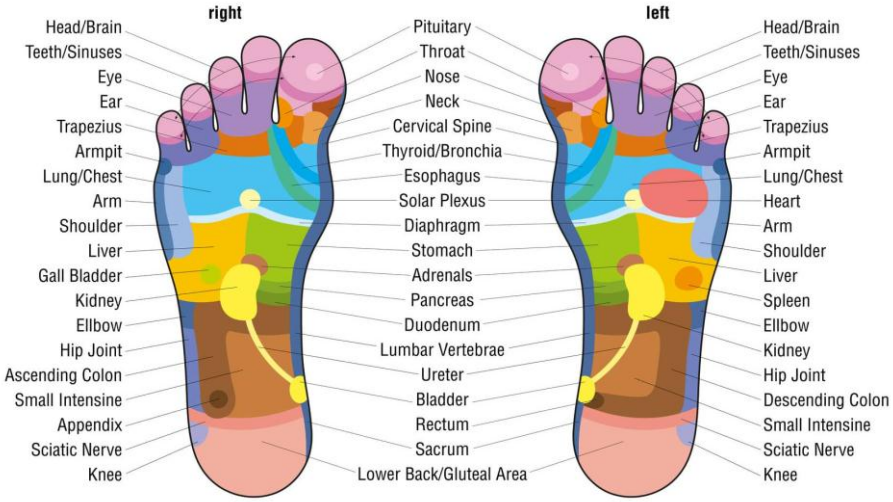

Figure 1 – showing the point for reflexology in foot.

Effect of *Padabhyanga*

Reflexology helps to release stress, which in turn helps the body to heal and regenerate itself. Massage helps to promote proper neurological function throughout the body. The brain works similarly as a computer. It receives constant stream of sensory impulse and sends appropriate motor impulse to govern movement and behavior. Any neurological disease impacting the body's ability to react in proper manner may be performed either by brain or by spinal cord.

Massage stimulates serotonin and dopamine, improves brain wave activity as well as quality of sleep, and activates parasympathetic response. Low level of serotonin is associated with many behavioral and emotional disorders.

Effect of High Heels

High heels create a shock wave through body starting from feet up to the spine. The can affect posture and gait and arthritis in the spine. Long term use of high heels to shortened Achilles tendon, plantar fasciitis and Achilles tendonitis.

Frequent pressure on the back of heels due to wearing too tight shoes or stiff in the heel, continuous use of high heels can lead to Haglund's deformity.

Care of Foot

Foot is only organ for locomotion. It is very important for performing various functions. So we should take care of foot by providing it the proper moisture**.** Avoid prolong use of high heels, contact with water for long time should also be avoided, use shoes of proper size, regular massage of foot by warm oil, use of socks in cold weather.

CONCLUSION

Pada being one among the *pancha karmendriya* and plays a pivotal role in the locomotor system. *Pada* is the *sthana* of *vatadosha*. It always has the fear of aggravation of *vata dosha* and is susceptible for injury. *Padabhangya* is one *bahirparimarjana chikitsa* with application of oil the feet. *Padabhangya*, eventhough is a small procedure the benefits of this procedure is broad spectrum i.e. from locally to systemic effects. *Kshipra, talahridaya, kurcha, kurchashira* are some *marma* located in the foot. *Padabhangya* stimulates the *marma* and helps to improve the function of structure related to that *marma*.

Padabhangya stimulates the Central Nervous System and help to reduce symptoms of various physical as well psychological disorders. Massage stimulates serotonin and dopamine, improves brain wave activity as well as quality of sleep, and activates parasympathetic response. Refloxogy is the technique of foot massage in which

pressure is applied on specific point related to specific organ. Stimulation to specific organ helps in improvement of function of that organ.

The excessive use of high heels, tight shoes, excessive exposure to heat or cold lead to various structural deformity so we should take the proper care of foot by using socks, use of shoes of proper fitting, foot massage by warm oil etc.

REFERENCES

1. Shri Satya Narayan Shastri (part 1) Charak Samhita with elaborated Vidhyotini Hindi commentary Sutra Sthana Arthedash Mahamooliya Adhyaya; chapter 30, verse 26; Varanasi Chaukhamba Bharti academy, 2014; 587.
2. Vagbhata, Ashtanga Hrdayam, Vol. I. Srikanta Murthy KR, editor. 2nd edition Krishnadas Academy; Varanasi, 1994; 24.
3. Sharma Ram Kumar and Vaidya A. Bhagwandesh; Charak Samhita, Volume 1, Sutrastana, 5/90-92; Edition- Chaukhamba Orientalia, Varanasi, 2011; 125.
4. Vagbhata, Ashtanga Hrdayam, Vol. I. Srikanta Murthy KR, editor. 2nd edition Krishnadas Academy; Varanasi, 1994; 24.
5. https: en.m. Wikipedia.org/ wiki/ Reflexology on 15- 07-17.
6. Anatomy and Physiology 2015 Indian Edition by Gerard J. Tortora and Bryan Derrickson. Wiley India Pvt Ltd., 4435 36/7, Ansari Road, Daryaganj, New Delhi – 110002. Reprint, 2016; 125
7. Krishana Garg, BD Chaurasia's Human Anatomy, (Vol 2nd) Published by CBS Publishers and Distributors, New Delhi, 2004.
8. Agniveshs, Charak Samhita, Revised by Charak and Drdhmala, Ayurveda Dipika Commrntry of Chakrapani Datta, Edited by Vaidya Yadavji Trikamji Acharya, Chowkhamba Krishnadas Acedemy Varanasi, Reprint- 2010; Sutrastana chapter-5, Verse-90-91 738, 42.
9. Dr. Avinash Lele, Dr Subhash Ranade, Dr. David Frawley, Secrets of Marma 1st edition, Published by Chaukhamba Sanskrit Pratishthan. reprinted Delhi, 2005.
10. Sharma Ram Kumar and Vaidya A. Bhagwandesh; Charak Samhita, Volume 1, Sutrastana, 5/90-92; Edition- Chaukhamba Orientalia, Varanasi, 2011; 125.
11. https: en.m. Wikipedia.org/ wiki/ Reflexology on 15- 07-17.