

CRITICAL ANALYSIS OF *SHIRODHARA*: A REVIEW

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ABSTRACT

As man entered the 21st century with modernization in almost each and every walk of life, he has also paid for it by living in several stressful psychological conditions. A person might appear to be healthy but he may be suffering from one or other psychosomatic complications, which requires relaxation therapies to lead a healthy life. *Shirodhara* plays an important role in Ayurveda to correct most of this kind. *Antahparimarjana Chikitsa* and *Bahirparimarjana Chikitsa* are the two important treatment modalities in Ayurveda. *Murdni taila* comes under *Bahirparimarjana Chikitsa*, it includes *Shiro abhyanga*, *shiro seka*, *shiro pichu* and *Shirobasti*. Among these *Shirodhara* is a classical and a well-established Ayurvedic procedure of slowly and steadily pouring medicated oil or other liquids on the forehead. To influence & enhance the perception, it is needed to have the critical analysis regarding the apparent mode of action of procedure and also mode of action of various *dravya* used in performing *Shirodhara*. In-order to match the contemporary era we should know all the recent advancements in this field. Hence, present work was planned to put forth a critical review.

Keywords: *Ayurveda*, *Shirodhara*, *Bahirparimarjana Chikitsa*, Stress, Tension.

INTRODUCTION

Shirodhara is an ancient *Ayurvedic* healing process performed in India for over 5000 years. As man entered the 21st century with modernization in almost each and every walk of life, he has also paid for it by living in several stressful psychological conditions. A person might appears to be healthy but he may be suffering from one or another psychosomatic complications, which requires relaxation

therapies to lead a healthy life. The etymology of *Shirodhara* is from *shira* = head and *dhara* = a steady flow. *Shirodhara* is a classical and a well-established *Ayurvedic* procedure of slowly and steadily pouring medicated oil or other liquids on the forehead. *Antahparimarjana Chikitsa* and *Bahirparimarjana Chikitsa* are the two important treatment modalities in Ayurveda. *Murdni taila* comes under *Bahirpa-*

rimarjana Chikitsa, it includes *shiro abhyanga*, *shiro seka*, *shiro pichu* and *shirobasti*.¹ it can be done by different medicaments like *Taila*, *Takra*, *Ksheera*, *Kwatha* etc. The synonyms of *dhara* are *dhara*, *seka*, *parisheka*, *avasheka*, *sechana*, *parisechana*. This procedure induces a relaxed state of awareness, which results in a dynamic psycho-somatic balance and the benefits include *Agni dipaka* (Increases appetite) *Dhatu poshaka* (Nourishes body) *Jnanendriya tarpaka* (nourishes sense organs). It induces sleep and improves speech, stabilizes mind, increases the physical strength, and increases sweetness of voice, softness of skin. It is helpful in *Timira* and *Netra Roga* etc. Also indicated in *arumshika* (eruption of scalp) *shirahsthoda* (headache) *shiro-paka* (burning sensation) *vrana* (ulcers).²

ANALYSIS OF SHIRODHARA PROCEDURE:

Shirodhara procedure can be done in 3 stages i.e., *Poorva Karma*, *Pradhana Karma* and *Pashchat Karma*.

POORVA KARMA

It includes *Sambhara sangraha* and *Atura siddhata*. *Sambhara sangraha* means the materials which are needed for performing procedure. Those are *droni*, *shirodharapatra*, *shirodharadravya*, gauze, cotton ear plugs, hot water bath, vessels, *rasnadichurna*, towels, and attendants. *Athura siddhata* means preparation of the patient i.e. Patient should be advised to pass stool and urine. Pulse, temperature and blood pressure should be recorded. *Shiro abhyanga* or *Sarvanga abhyanga* should be done. Eyes should be covered and ears need to be covered with ear plugs.

PRADHANAKARMA

The patient should be made lied down comfortably in supine position. Height of the *dharapatra* should be 4 *angula* from the fore head. Temperature of the *dravya* should be maintained throughout the procedure i.e. 38-40⁰ c, oscillation-16-17osc/min, duration-45 to 60 minutes. Course of the treatment 7-21 days.

PASHCHAT KARMA

Head of the patient should be wiped with towel. Application of *rasna churna* over the vertex of head. Patient is advised to take rest for a period of time.³

PROBABLE MODE OF ACTION OF SHIRODHARA

Any substance situated at certain height possess Potential Energy and this energy is converted into Kinetic Energy when the substance fall from that certain height according to “Law of Conservation of Energy”

Now Potential Energy of substance depends upon two things-

- (1) Mass of substance
- (2) Height of the substance

If height remains constant Potential energy depends upon mass of substance or mass energy i.e. more the mass of a substance more will be the energy possessed by the substance. It is clear from above discussion that – more the specific mass of a substance more will be its energy. On the other hand, we know that when a moving substance collides with a resting substance it generates acceleration so more

will be the mass more will be the energy and more will be the momentum generated. It is clear from above discussion that when anything pours upon forehead from a certain height due to change in the form of energy it generates momentum and that momentum may cause change in voltage and stimulate nerve impulse generation or accentuate the nerve impulse conduction. The magnitude of momentum is the ultimate factor which decide the voltage difference for nerve impulse generation and conduction if its magnitude is small the energy is absorbed by the skull only. This may be the probable reason why drug is given for 45 min- 1 hour in *Shirodhara*. It is known from the knowledge of modern physiology that there is continuous electrical activity in brain that generates electromagnetic waves and recorded with the help of Encephalogram (EEG). The intensities of brain waves on the surface of the scalp ranges from 0 to 200 microvolt's and their frequency ranges from once every few second to 50 or more per second. The character of these waves highly depends on the degree of the activity of cerebral cortex.⁴

PROBABLE EFFECT OF PRESSURE AND TEMPERATURE IN PROCEDURE OF SHIRODHARA

Shirodhara produces a constant pressure and vibration which is amplified by hollow sinus present in frontal bone. The vibration is then transmitted inwards through the fluid medium of cerebrospinal fluid (CSF). This vibration along with little temperature may activate the functions of thalamus and the basal forebrain which then brings the amount of serotonin and catecholamine to the normal stage. Pressure

also has an effect on impulse conduction. If prolonged pressure is applied to a nerve, impulse conduction is interrupted and part of body relaxes. In the procedure of *Shirodhara*. The prolonged and continuous pressure due to trickling of medicated liquid over forehead causes tranquility of mind and reduces stress by modulating the nerve progression/stimulation. When nerve endings of autonomic nervous system is stimulated, they produce chemical substances like Acetylcholine which exists in the tissues in an inactive form and is activated by a nerve impulse vibration produced due to constant pouring of liquid over forehead which may stimulate nerve endings and in turn Acetylcholine may be liberated. Small doses of Acetylcholine cause fall of blood pressure leading to decreased activity of central nervous system resulting in tranquility of mind. It is to be noted that larger doses of Acetylcholine like substances activate central nervous system, thereby resulting in increased activity of body and mind. During the process the patient concentrates on *Dhara dravya*, which is falling on his head, which increases the intensity of a-brain waves and decreases the brain cortisone and adrenaline level. This factor is also contributory in anti-stress effect of *Shirodhara*. Probably *Shirodhara* normalizes the two important neurotransmitters Serotonin and norepinephrine, which regulates a wide variety of neuropsychological processes along with sleep. Serotonin (5-hydroxytryptamine, 5-HT) is a neurotransmitter in the brain that has an enormous influence over many brain functions. Serotonin is found in three main areas of the body: the intestinal wall; large constricted blood vessels; and the central nervous system.

Of the chemical neurotransmitter substances, serotonin is perhaps the most implicated in the treatment of various disorders, including anxiety, depression, obsessive-compulsive disorder, schizophrenia, stroke, obesity, pain, hypertension, vascular disorders, migraine, and nausea. Stress is one of the biggest factors determining the amount of serotonin in the brain. Lack of sleep, inadequate exercise, anxiety and a hectic schedule are all factors that can greatly contribute to stress and severely lower the level of serotonin, resulting in feelings of fatigue, down moods that can turn into depression, insomnia, loss of appetite and many other related issues. *Shirodhara* bring a calming effect because after completion of procedure patient feel relax and sleepy. So it may say that one of the mechanisms of action of *Shirodhara* is by raising the level of Serotonin.⁴

AYURVEDIC POINT OF VIEW

Shirah is the seat of *Prana*, and all *Indriyas* (Sense organs) having shelter in *Shirah*, it is also known as *Uttamanga*.⁵ So due to this fact *shirodhara* provides strength to *Prana* and *In-*

driyas which are mainly vitiated in case of psychological disorders. *Indriyas* are in close contact of mind so when *Indriyas* remain healthy then mind automatically remains healthy. In this way *shirodhara* keeps body and mind healthy.

According to Yoga Sutra, between both eye brows one of the *Shada Chakra*, i.e. *Agya Chakra* is located which controls the function of other Chakras, So when the patient meditates on *Dhara*, it enhances the power of *Agya Chakra*, thereby it regulates the function of other *Chakras*. *Hridaya* (Brain) is considered as the seat of *Chetana* which is vitiated by the *Raja & Tama Guna*. *Shirodhara* restores the *Chetana* by giving strength to the *Hridaya*.

CRITICAL ANALYSIS OF DRAVYAS USED IN SHIRODHARA

- Based on *dravya* used in *Shirodhara* it can be called *Taila dhara*, *Takra dhara*, *Kashaya dhara*, *Ksheera dhara* and *Jala dhara*
- Drugs used for *Shirodhara*, based on the nature of the disease.⁶

Table 1: Dravya Versus Nature Of Disease

<i>Vata roga</i>	<i>Bala taila, Dashamula kwatha and, Maha narayana taila</i>
<i>Pitta samsrushta vata roga</i>	<i>Chandana, Usira kwatha, Narikela jala, Takra dhara</i>
<i>Kapha samsrushta vata roga</i>	<i>Nagara, mustaka, and madhuyasti kwatha</i>

PERIOD FOR CHANGING THE LIQUID

- Oil – 3 days once
- *Takra* – daily
- *Ksheera* – daily
- *Dhanyamla* – 3 days once⁷

MODE OF ACTION OF SHIRODHARA DRAVYA

Certain amount of drug absorption is possible by the topical application when they are in lipid media. The pilo sebaceous follicles play some role in absorption. Routes of penetration is through the follicular pores to the follicles

and then to dermis via sebaceous glands. The permeability of sebaceous gland is greater than that of granular layer of epidermis.

Percutaneous absorption may be affected by Transcellular diffusion, Diffusion through channels between the epidermal cells, Diffusion through sebaceous ducts, Diffusion through the hair follicles, and Diffusion through the sweat glands.⁸

According to *Thesusruthasamhita*, the *Virya* of drugs present in *Abhyanga*, *Parisheka*, *Avagaha*, *Lepa* etcetera are absorbed into the skin and then digested by *agni* (*Bhrajaka pitta*). In *Shirodhara* Drugs undergoes *Pachana* by *Bhrajaka pitta*, *Virya* of drugs are absorbed through *Romakupa*, *Dhamani*, then Circulated all over the body. Nourishment of *Dhatu* takes place and thus *Dosha shaman* occurs.

PROBABLE MODE OF ACTION OF SHIRODHARA IN SPECIFIC INDICATIONS

INSOMNIA

Diminished function of thalamus and forebrain causes Serotonin levels to decrease and Catecholamines increase thus manifesting Insomnia. *Shirodhara* normalizes the functions of thalamus and forebrain, which brings the amount of serotonin and catecholamines to normal stage, which induces sleep. *Shirodhara* stimulates the pineal gland which produces the hormone melatonin, melatonin regulates wake and sleep cycle.⁹

MADHUMEHA

Stress cause activation of hypothalamic hypophyseal adrenal axis which releases ACTH

Recent Advances in *Shirodhara* Instruments¹²

hormone from the anterior pituitary thus increases glucocorticoid levels in blood further it increases the blood glucose levels. *Shirodhara* causes relaxation of the patient and removes the stress which may decrease the tisol level and in turn decrease the blood glucose levels.¹⁰

HYPERTENSION

Increased active arterial vasoconstriction plays a role in established essential hypertension. Decreased peripheral venous compliance which may increase venous return, increase cardiac preload and ultimately cause diastolic dysfunction. Due to continuous and rhythmically pouring of liquid lead to state of concentration and enhance the release of Serotonin and produces chemical substances like acetylcholine and small amount of acetylcholine causes fall of blood pressure and supine position also helps in relaxation.¹¹

FACTORS DECIDING EFFICIENCY OF SHIRODHARA

- Thickness of *dhara*
- Height of *dhara*
- Uniformity of *dhara*
- Posture of patient – *Shavasana* is best
- Pin drop silence
- Temperature & its uniformity of liquid material in case of Vata and Kapha roga
- Duration
- *Dhara* Method – Single point or oscillation
- Viscosity & specific gravity of oil
- The choice of oil
- Changing of oil

MERITS

- Less/ no man power needed
- Manual errors can be prevented.
- Picture1: *Shirodhara*- Automatic



DEMERITS

- Expensive
- Less effective
- Complete relaxation of mind and body is not possible in sitting posture
- Picture2: *Shirodhara*- Automatic



MERITS

- Portable
- EconomicalPicture2 *Shirodhara*- Automatic
- Suitable for *Jaladhara*, *Ksheeradhara*
- Picture 3: *Shirodhara* – Cristal mind



DEMERITS

- No Oscillation facility
- Drip flow cannot be controlled
- Heating of oil is not possible
- Picture 4: *Shirodhara* stand – With adjustable wheels



CONCLUSION

Stress induced disorders are the emerging factors in current scenario. People are facing various forms of stressors and are striving hard to get rid of it. *Shirodhara* is a type of *murdhni taila* which has a wide range of utility in treating somatic as well as psychological complaints. There are various methods of *Shirodhara* being followed. Hence there is a need

for standardization based on *roga* and *rogi pa-reeksha*. Proper understanding with respect to the *dravya* used and a standard procedure of dhara based on condition are needed to get maximum beneficial effects.

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Source of Support: Nil

Conflict Of Interest: None Declared

How to cite this URL: Chapara Aparna Et Al: Critical Analysis of Shirodhara: A Review. International Ayurvedic Medical Journal {online} 2017 {cited April, 2017} Available from: http://www.iamj.in/posts/images/upload/1190_1196.pdf