



### Role of *Shirodhara* As an Antihypertensive - A Case Study

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#### ABSTRACT:

Hypertension is the commonest lifestyle disorder in both developed & developing countries. It is one of the important risk factors for Cardiovascular mortality. The burden of hypertension increases with age, and among individuals aged  $\geq 60$ , hypertension prevalence is 65.4%. Hypertension is one among the most common public health issue. But there is no direct reference of Hypertension in *Ayurveda*. So, it can be correlated with *Raktagata vata*, *Vata prakopa* or *Rakta Vriddhi*, etc. Based on *Lakshanas* can be said that it is a *Vata prakopa* along with

#### INTRODUCTION:

Hypertension is one among the most alarming health problems of present era. Among the several psychosomatic diseases, the cardiovascular disorder like *Uchcha Raktachapa* (HTN) is quite significant. The diagnosis of Hypertension is still a problematic area as the disorder is usually

involvement of *kapha*, *pitta doshas* and *rakta dhatu*. In *Ayurveda*, *Shirodhara* is very effective in *Vata Shamana*. *Shirodhara* involves the rhythmic & consistent flow of lukewarm medicated oils on the forehead. This stimulates the *Chakra* point just above & between the eyebrows & creates a blissful sensation. *Shirodhara* has positive effect on neurotransmitter, as it works on *Adnya chakra*, *Sthapani Marma* & Pineal Gland.

#### KEYWORDS:

Hypertension, *Shirodhara*, *Adnya Chakra*, *Sthapani Marma*, Pineal Gland

asymptomatic. That is why it is often called as “silent killer”. World Health Organization has estimated that High Blood Pressure / Hypertension cause 1 in every 8 deaths, making Hypertension the third leading killer in the world. Globally, there are about one billion hypertensive people and about one million people die as a direct impact of

Hypertension. In pathogenesis of hypertension (*Uccharaktachapa*), *Vata*

(*Vyana&Prana*), *Pitta* (*Sadhaka*), *Kapha* (*Avalambaka*) (bodily humors) and *ManovahaSrotas* (psyche channels) involving *Hridaya*, *Rasa-Rakta Samvahana* and *Oja* are main responsible factors. They are vitiated due to disturbed *Manasika Bhavas* (psychological factors) like *Chinta* (Anxiety), *Tanav* (Stress), *Krodha* (Anger) etc. producing hypertensive state.

*Shirodhara* is an *Ayurvedic* method of treatment in which herbal oil, medicated milk or decoction is poured gently and steadily over forehead in a continuous stream at a point from a definite height. *Shirodhara* is a practiced and effective procedure found to have therapeutic effects.

*Shirodhara* is a classical and a well-established *ayurvedic* procedure of slowly and steadily dripping medicated oil or other liquids on the forehead. This procedure induces a relaxed state of awareness that results in a dynamic psycho-somatic balance used by *vaidya* for various indications which includes psychological, neurological, metabolic and autoimmune diseases. *Tailadhara* is one of the varieties of *shirodhara* which is considered specifically useful in various diseases where *vata dosha* plays predominant role. It is mainly indicated in insomnia, stress, anxiety, depression, hair loss, fatigue, and functional as well as organic disorders.

*Shirodhara* is indicated in almost all stress and psychosomatic disorders such as IBS (Irritable Bowel Syndrome), Asthma,

Neurological disorders viz. Headache, Epilepsy, Motor Neuron disease, Psychiatric disorders like Psychosis, Neurosis, Insomnia, Conversion disorders and in Psoriasis, Eczema, Hypertension and Alcoholism. It also plays important role in normalizing the High Blood Pressure.

#### CASE STUDY:

A 65 year old male patient with complaints of *Shirashula*, *Shiroguravta*, *Bhrama*, *Chhardi* on & off, *Sweda pravrutti* on & off with *Malavstambha*.

#### On Physical Examination,

GC- Normal, *Nadi*- 98/min, *Mala-Avastambha*, *Mutra*- *Samyak*, *Jivha*- *Saam*, *Kshudha*- *Prakrut*, *Nidra*- *Ratrijagan*, *Nakha* – Clubbing of nails (due to low Oxygen in blood & can be the sign of lung disease & Hypertension), BP- 170/100 mm of Hg, ECG done- Normal.

#### History of:

*B<sub>12</sub>* Deficiency – Treatment taken for 2 months,

**Drug History** of Tab. Vertin 8mg OD & Tab. Pan 40

**Surgical History** of ECCE with IOL of both eyes- 4 years before.

Patient has habit of *Ushapan*, *Nishapan*, *ratrijagaran*- due to stress.

#### Patient was on following treatment:

1. *Chandraprabha vati* 2tab BD
2. *Sutashekhar vati* 2tab BD
3. Tab. Amlodipine 5mg stat
4. Advised for HTN profile
5. Medical fitness

Then Patient was advised for *Shirodhara* for 7 consecutive days & *Shirodhara* was started.

Day	Complaints	Before Treatment	After Treatment
Day 1	<i>Bhrama</i> +++, <i>Shirogurav</i> ++, <i>Vam Shir pradeshi chimchimayan</i> ++	150/100 mmHg	140/90 mmHg
Day 2	<i>Bhrama</i> +++, <i>Shirogurav</i> ++, <i>Vam Shir pradeshi chimchimayan</i> +	150/100 mmHg	140/100 mmHg
Day 3	<i>Bhrama</i> ++, <i>Shirogurav</i> +, <i>Vam Shir pradeshi chimchimayan</i> +	160/90 mm Hg	150/90 mmHg
Day 4	<i>Bhrama</i> ++, <i>Shirogurav</i> +, <i>Vam Shir pradeshi chimchimayan</i> +	150/100 mmHg	140/90 mmHg
Day 5	<i>Bhrama</i> ++, <i>Shirogurav</i> +	140/90 mmHg	130/90 mmHg
Day 6	<i>Bhrama</i> +	140/90 mmHg	140/80 mmHg
Day 7	<i>Bhrama</i> +	140/80 mmHg	130/70 mmHg

### Hypertension- Modern View

Known as high or raised blood pressure. It refers as increase in arterial pressure above normal limit. WHO defined it as pressure exerted by blood column per unit area of arterial wall during pumping of blood. It is created by the force of blood pushing against the walls of blood vessels. The higher the pressure the harder the heart has to pump.

#### Classification:

1. Essential Hypertension- 2 primary types
  - i. After Doctor notice it has been diagnosed high on 3 or more visits
  - ii. No symptoms but experiences frequently headaches, dizziness, diet upset.
2. Secondary Hypertension- cause is an abnormality in arteries supplying blood to kidneys & other causes.

#### Factors Affecting Blood Pressure

1. Vessel Elasticity- force generates with each heartbeat pumped from heart to vessel
2. Blood Volume
3. Increase Cardiac Output
4. Peripheral Resistance- 3 sources
  - i. Decrease Vessel diameter
  - ii. Viscosity
  - iii. Vessel length

#### Causes of Hypertension

- Smoking
- Being overweight or obese
- Lack of physical activity
- Too much salt in the diet
- Too much alcohol consumption (more than 1 to 2 drinks per day)
- **Stress**
- **Disturbed Sleep Patterns**
- Older age, Genetics

#### Pathogenesis:

Due to causative factors like stress & disturbed sleep patterns, affect biological circadian clock causes hypertension. These

repeated elevations of Blood Pressure stimulate of nerves causing release of large amount of vasoconstricting hormone (Epinephrine). It increases activity of SA node resulting in increased heart rate & also heart muscle stimulation. Heart pumping rate is raised & causes increase in stroke volume. This results in Hypertension. Continuous stress causes strain on heart & blood vessels. This factor causing extra strain resulting in increased risk of heart attack & stroke.

### **Mechanism of control of Hypertension:**

1. Nervous Mechanism- Through Baroreceptors
2. Renal Mechanism
3. Local mechanism
4. Hormonal Mechanism

### **Ayurvedic approach of Hypertension:**

In *Ayurveda*, no specific disease recognized as "Hypertension". Regards hypertension as a state of vitiation of *vata*, *pitta* and *kapha*. More specifically, Regulation of blood pressure is achieved through the functions of

- *Prana Vayu*,
- *Vyana Vayu*,
- *Sadhaka Pitta*,
- *Avalambaka Kapha*,

**"अवलम्बकहृदयंसाम, र्थकरोति"-**

support circulatory system by balancing between Input & Output & lubrication of blood vessels.

- *Rakta Dhatu*

### **Samprapti Ghatakas (Stages of Pathogenesis)**

**Doshas:** *Prana Vayu*, *Vyana Vayu*, *Sadhaka Pitta*; **Dushyas:** *Rakta*, *Rasa*, *Meda*; **Agni:** *Jatharagni-Dhatwagnimandya*; **Aama:** *Rasagata*, *Raktagata*; **Srotas:**

*Raktavaha*, *Rasavaha*,  
*Manovaha*; **Srotodushhti:** *Sanga form of srotorodha*; **Udbhava sthana:** *Hridaya*, *Dhamani*; **Adhithana:** *Sira*, *Dhamani*, *Srotas*; **Sancharasthana:** *Sarva sharira*; **Rogamarga:** *Bahya* and *Madyamarogamarga*.

*Prana Vayu* functions as Medulla Oblongata responsible for neural regulation of Blood pressure, & *Vyan Vayu* helps in circulation & maintaining rhythm of heart. As per *Ayurveda*, Hypertension cause due to interaction of vitiated *Prana* & *Vyan Vayu*. This interaction responsible for force generating during Cardiac output, which is mediated by Sympathetic Nervous overactivity, due to which there causes increase in fluid volume & also vaso constriction due to neurotransmitter action resulting in increased Cardiac preload. It results in contractility of *hrudaya* & increases peripheral resistance resulting in Hypertension.

### **Shirodhara:**

**करोतिशिरसस्तृप्तिंसुत्वक्कमपिचाननमसंतर्प  
णमचेन्द्रियाणाम्शिरसःपरिपूरणम् ॥**

**(सु.चि.24/25)**

It is *Panchakarma* procedure of pouring of medicated oil slowly & steadily on forehead. It induces a relax state of awareness result in psychosomatic balance induces neurological & psychological balance. The *doshik* action of *Shirodhara* mainly on *Vata dosha*, as vitiated *vata dosha* (*Prana vayu* & *Vyana Vayu*) is the main cause of Hypertension. In *Shirodhara*, pouring of medicated *dravya* to be kept at 4 *Angula* distance as it generates action potential &

potential energy get converted into kinetic energy.

### **Mode of Action of Shirodhara:**

Continuous *Shirodhara* results in vibration & pressure over the skull. This vibration & pressure both acts differently. Poured lukewarm oil causing vibration activates the function of thalamus basal forebrain in Medulla Oblongata. This hormones are responsible for vital functions such as Blood pressure, heart rate, respiratory rate, pulse pressure improvement. It brings amount of serotonin & catecholamine to normal stage which represent in Medulla Oblongata through baro-receptors present in carotid artery & arch of aorta & it induce sleep resulting in lowering of high Blood Pressure. At the same time, vibration amplified by hollow sinus present in frontal bone & amplified vibration transmitted inward through fluid. *Shirodhara* implies continuous pressure causing local action & systemic action. It implies effect on impulse conduction through tactile & thermo receptors. Continuous pouring of oil causes prolonged pressure applied to nerves causing alpha adrenergic blocking effect & block certain epinephrine & nor-epinephrine production & acts on adrenergic neuron produce effect of modifying alpha rhythm. Thus, impulse conduction interrupted & slows down mind wave & regulation of sympathetic overflow resulting in tranquility of mind & reduces stress by reaching brain cortex results in lowering high blood pressure.

**For *Shirodhara*, why the center of Forehead?**

### **1. Adnya Chakra:**

It plays important role in *Yoga* & Meditation. In meditation, focusing on *Adnya Chakra* leads to psychosomatic harmony. It improves the function of mind vitiated by stress as it is a place of *sukshmanamana* (subtle mind). Dripping of oil with closed eyes helps person to focus on *Adnya chakra* giving meditation like effect causes stillness of mind leading to adaptive response to basal stress resulting in lowering of Blood Pressure.

### **2. Sthapani Marma:**

*Acharya Sushrut* mentioned *Sthapani marma* as a *Sira marma* & *Vishlyaghna Marma* present in between eyebrows. *Vishlyaghna Marma* has predominance of *vata dosha*. *Taila* is ultimate *karya prabhavakover* it. *Tailadhara* causes hypotensive effect mediated through *sthanapani marma*. As it is *sira marma*, it has relation with blood & heart. *Sira marma* has some reflex action on baroreceptors which are already disturbed in Hypertension due to constriction of arterioles. Through baroreceptors, conduction of impulse of vasodilation & reduced systolic & diastolic to decrease in pronounced way.

### **3. Pineal Gland**

This is Endocrine gland in epithalamus near to Medulla Oblongata. This links light sensitizing photo receptors in Amphibians & reptiles called Parietal eye. In case of human being, it acts through darkness as photoreceptors are not present. Pineal gland is principle seat of Soul. In vertebrates, exposure of light sets off a chain reaction of enzymatic events within gland regulating Circadian rhythm. As it induces Melatonin (Serotonin derivatives) plays important role

in regulating sleep pattern i.e. circadian rhythm. As a therapeutic effect, application of heat in the form of *dhara*, pressure of medicine, treatment timing, temperature of taila causes vasodilation & helps medicine to penetrate through follicular pores to the follicles & then to dermis via sebaceous gland. As drug absorption is possible by topical application if medicine is in lipid media. Permeability of sebaceous gland is more than that of granular layer of epidermis. Pilosebaceous follicles plays an important role in absorption as route of penetration through follicles. Darkness makes pineal gland to produce hormone melatonin, regularizes sleep pattern, therefore, during *shirodhara* pinpoint silent alongwith darkness to maintain.

#### 4. Baroreception:

Baroreceptors are the stretch or mechanoreceptors present in the Carotid Sinus & Arch of Aorta. Function of baroreceptors is to detect change in Blood pressure & send message impulse for either vasodilation. Stimulation to baroreceptors send input to brain stem through afferent fibers via 9<sup>th</sup> & 10<sup>th</sup> nerves. High Blood pressure in vessels stretches the receptors results in movement of Na<sup>+</sup> ions into nerve ends & initiate action potential helps to change the tension of arterial wall resulting in dilatation of blood vessels resulting in normalizing Blood Pressure.

#### DISCUSSION:

*Shirodhara* is a *Panchakarm* therapy for relieving stress & avoid many psychosomatic disorders like Hypertension, anxiety, etc. In this

procedure, lukewarm medicated oil continuous poured over the center of forehead through certain heights. Over that point, resides the *Adnya Chakra*, *Sthapani Marma*, & Pineal gland. *Shirodhara* acts as stress reliever & person experiences unexplainable relaxation & provides *prasanna atmendriya mana* & allows one to overcome stress related condition like insomnia, Hypertension, anxiety, etc. *Shirodhara* brings sedative effect to body & mind results in relieving stress without any side-effects to body. Thus, helps in normalizing High Blood pressure. In pathogenesis of Hypertension, *shirodhara* helps in *Samprapti Vighatan* indirectly as due to hypertension many of side-effects such as tachycardia, stress, anxiety issues get relieved resulting in reducing high blood pressure. *Shirodhara* is done through certain height causes change in momentum & voltage, stimulate nerve impulse generation & conduction. *Shirodhara* reestablishes the functional integrity between *tridosha* mainly *Vata&Kapha* as *taila* causes *vata shaman* & *tarpak kapha* to increase in balance condition, which helps to give sedative effect which relieves the mental stress results in lowering of high Blood Pressure. *Shirodhara* brings out variety of benefits including improved blood circulation to brain & heart, reduces nervous tension & helps in inducing sound sleep. It balances disturbed hormonal levels, maintain physiological & psychological health of a person.

#### CONCLUSION:

*Shirodhara* overall works on psychosomatic diseases & relieves

secondary symptoms of Hypertension resulting in normalizing Blood Pressure. *Shirodhara* plays important role in maintaining Serotonin level & balances the vitiated *Vata dosha*, reestablishes the functional integrity between *Tridosha* leading to tranquility of mind & reduces stress.

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