

# CONCEPTUAL STUDY OF BALADATRYADI TAILA SHIROPICHU IN CHEMOTHERAPY INDUCED ALOPECIA W.S.R TO SCALP COOLING SYSTEM

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## ABSTRACT

*Beauty has great role in one's life. It varies according to perspective. Hair is an important factor in determining the external beauty. There are many other reasons why hair is more than just a beauty. It plays an important role in determining self-image, community outlook and psycho social functioning. Patience to frame the effective management for the chemotherapy induced hair loss is still endless. The pain of not being able to face the society is more than that of the pain caused by chemotherapy. The accumulation of mitotic inhabitants of chemotherapeutic drugs in the hair follicles cause apoptosis and leads to its loss. Theories to inhibit the anti-mitotic effect in the hair follicle have been put forwarded years before. It says scalp hypothermia or scalp cooling system reduce the cutaneous scalp circulation which cause vasoconstriction of blood vessel and incidentally reduce the quantity of antimitotic which accumulate in the hair follicle. In Ayurvedic perspective it is the manifestation of aggravated Pitha dosha which cause paka of the hair follicle and leads to keshha shata. Shiropichu with baladatyadi taila can normalise the aggravated Pitha dosha. Other pithahara drvyas may also be used in this manner. This alternative scalp cooling method is on par with modern technique of scalp cooling system.*

## INTRODUCTION

Beauty can be defined as the combination of qualities, such as shape, colour, or form, that pleases the aesthetic senses, especially the sight. The impact of term healthy hair on the cosmetic industry is much more appreciated. The sociology of hair is a hot topic to discuss. Healthy and long hair is one among the factor which determine the confidence, self-image and personality. Alopecia is the most devastating aspect of chemotherapy. The mechanism behind it is not revealed yet still it is evident to know that alopecia is due to the apoptosis in the sensitive tissue by the cytotoxicity of drugs. p53 is a transcription factor and tumor suppressor protein that plays a critical role in mediating apoptosis in the cells. P53 sensitise the cell for the cell death. Whatever the intervention planned

to prevent act like a double-edged sword, since p53 is the causative factor which is responsible for the desired and undesired cell death. Scalp cooling is the method of preventing or reducing chemotherapy induced alopecia widely practiced in European nations. It diminishes intrafollicular metabolism and causing vasoconstriction of the blood vessels. This mechanism helps to reduce the amount of drug delivered to the hair follicles. Irrespective of the cause *keshha shata* in Ayurveda is a *Pittaja Vyadi*.

## METHOD

*Murdha Tailam* is one of the effective methods to deal with the different types of disorders relating to *urdwa*

*jatru* . *Murdha Tailam* includes *shiro pichus* ,*shiroabyanga*,*shiro lepa* and *shirovasti*. *Kesha shatana* listed in the indication of *Shiro pichu* by *Vagbhata*<sup>1</sup>. Reference of *Baladatyadi taila* is available in the *Taila prakarana* chapter of *Sahasrayoga*<sup>2</sup>.

Ingredients of *Baladatyadi taila* are listed below.

	Ingredients
<i>Kashaya dravya</i>	<i>Bala</i> <i>moolam</i> , <i>Amalaki</i> , <i>Guduchi</i> , <i>Ushira</i> <i>,Hrivera</i> , <i>Chandana</i> , <i>Yashti madhu</i> <i>,Bakula</i>
<i>Kalka dravya</i>	<i>Madhuka</i> , <i>Chandana dvaya</i> <i>.Kushta</i> , <i>Ulpala moola</i> , <i>Shariba</i> <i>,Trijata</i> , <i>Jati phala</i> , <i>Karpura</i> <i>,Shatavari</i> , <i>Jeevaka</i> , <i>Rishabhaka</i> <i>,Meda</i> , <i>Mridweeka</i> , <i>Kunkuma</i> <i>,Nagapushpa</i> , <i>Manjishta Katurohini</i> <i>,Thriphala</i>

Along with these *dravyas* , milk is also added to the *dravadravya* part while preparing. Indication of the yoga are *shiro netra daha*, *urdwajatrugata roga* etc. The *dosha pratyanka* of the *taila* is *vatapithahara*. Pharmacological properties of the drugs clearly say the *Taila yoga* is *Pitahara* in nature.

### Pathogenesis of *Indralupta*

*Pitta dosha* present at hair follicle associated with *vata* causing the falling of hairs preceded by its *paka*, after that *kapha* associated with *rakta* blocks the hair follicles nourishment, hence no new hair grows in the place<sup>3</sup>

### Procedure of *Shiropichu*

Following the chemotherapy treatment patient has to sit on a comfortable chair. A thick cotton pad / sterile cloth is dipped in ample amounts of Oil is applied over the head for a specific time interval.

### *Poorva karma*

The basic materials needed for the [procedure are 1.oil it has to be prepared and stored.

2.Sterile cotton pad or bandage cloth folded and cut in the form of square shaped swab or pad.

3.Bandage cloth for tying the *pichu*, sterile cloth, sponges, napkins, or tissue papers for wiping.

### *Pradhana karma*

The patient is made to sit on comfortable chair. Take sterile cotton and make a thick pad out of it such that it is square in shape. This gauze pad is interposed between layers of bandage cloth, like wise prepare pads of uniform dimension which is called as *pichu*. The *pichu* or cotton pad thus prepared is now dipped in the *Baladatyadi taila* in a small bowl. It is left in place until the whole pad gets wet with the oil. The soaked *pichu* now kept on the crown of the head. The sterile bandage cloth is tied around the *pichu*. Make sure the *pichu* should be kept in position to prevent it from falling down.<sup>4</sup>

### *Paschat karma*

After the completion of decided time of *pichu* application, the bandage knot shall be opened and bandage cloth and *pichu* removed carefully. The mode of action of *shiropichu* can be divided into two types Local and Systemic .Systemically benefit obtained by cellular absorption. Absorption of skin depends on the number of factors, the most important of which are concentration, duration of contact, solubility of medication, and physical condition of the skin and part of body exposed. In *shiropichu* oil form is used which has good dense concentration with longer duration of contact. Also, the skin over the scalp is thin as compared to other parts of body and absorption is faster and more from the scalp.

### Procedure of Scalp cooling system

Scalp cooling was initiated 30 minutes prior to the chemo therapy cycle by fitting the silicone cap on the patient's head, followed by application of an insulating neoprene cap. The silicone cap was then gradually cooled to the target treatment temperature by liquid coolant circulating through the channels within 2 cooling compartment. The temperature should be maintained throughout the chemotherapy cycle<sup>5</sup>. Scalp cooling can cause discomfort if the patient is sensitive to cold. Applying cold temperatures to the scalp can

lower the overall body temperature, may leads to a state of hypothermia. Some scholars have been concerned that scalp cooling could increase the risk of metastasis. But later research suggests that risk of scalp metastasis isn't higher<sup>5</sup>

## RESULT

Prevention of chemotherapy induced alopecia may have an effect on quality of life and psychosocial wellbeing use of *Baladatyadi taila shiropichu* should be viewed as a means to care for the whole patient rather than a solely cosmetic issue. Further studies are warranted to evaluate the efficacy of the treatment. *Baladatyadi taila Shiro pichu* can be considered as an alternative scalp cooling method is on par with the modern scalp cooling system.

## DISCUSSION

Scalp cooling has been used in more than 30 countries as a potential mechanism to prevent chemo therapy induced alopecia.<sup>6</sup> One review of more than 6000 patients suggested that scalp cooling system was effective, but not for all patients<sup>7</sup>. The possible mechanism for efficacy of these (both *shiropichu* with *seetha veerya dravya*) and scalp cooling system include vasoconstriction with reduced delivery of chemotherapy to the scalp, reduced cellular uptake, and decreased follicular metabolic rate<sup>8</sup>. there are practical issues that need to be considered when implementing use of scalp-cooling technology. One concern is how to incorporate pre-and post-chemotherapy scalp-cooling periods. Rather than the theory behind its operation practicability is the raised question.

Chemotherapy releases p53 which is cytotoxic. These toxic agents can be considered *Visha* which is having *ushna veerya*. In the pathogenesis of *Indralupta*, Pitta is the main triggering *dosha*. The treatment required here is *pittahara* which will cause Hypothermia resulting in constriction of blood vessel that reduces the uptake of P53 in the scalp and degree of hair loss<sup>9</sup>. The *Baladatyadi taila* has indication of *Dahahara* which indicates its *Pitta samana* property, which is nothing but hypothermic in nature. Additional benefit that is going to get if prefer *Baladatyadi shiropichu* is that *dravya* are having *Keshya* property too. The yoga acts as a check to the cytotoxic absorption and help to

attain a healthy scalp. Being a *rasayana dravya*, *Dhatri(amalaki)* itself accelerates the *Uttarotara datu paka*(consecutive dhatu formation)and hence is responsible for the process like proper dhatu *poshana*(nutrient assimilation).It is observed that most of the drugs are having *Tikta Kashaya Madhura rasa*. As above said vitiated *vata* and *pitta* are responsible for the Hair loss here. *Susruta sutrastana* encloses the description of *tridosha*, when it has been explained that *Bhrajaka pitta* absorbs the medicaments administered through the skin<sup>10</sup>. It indicates that application of drugs as topical medicine in order to attain systemic benefit won't be in vein.

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