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# A CLINICAL STUDY ON THE EFFECT OF VASADI KWATHA AND ELADI GUTIKA IN THE MANAGEMENT OF SWARABHEDA W.S.R. TO HOARSENESS OF VOICE

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#### ABSTRACT

With an evolutionary history that spans several thousands of years, *Ayurveda* is one of the oldest and meticulously codified systems of healthcare in the world. The vitiated *doshas* circulating in the body, with predominance of vitiated *Vata & Kapha* migrate to *Mukha Pradesha*, thus causes the *Mukha rogas*. When they get located (*Sthana sanshraya*) in the *kantha Pradesha*, *Swarabheda* occurs. *Swarabheda* can be correlated with Hoarseness of Voice as both of them have similar features. This study included detailed study of the disease, its nature and the evaluation of the effects of the two formulations- *Vasadi Kwatha* mentioned by *Acharya Sharangdhara* and *Eladi Gutika* of *Acharya Charaka*. 18 patients fulfilling the inclusion criteria were included in this trial into one single group and were given *Vasadi Kwatha* (40ml in two divided doses) and *Eladi Gutika* (12gm in divided doses in the form of chewable pills) for two weeks. The effect of therapy was assessed by grading and scoring system based on signs and symptoms. Out of 18 patients, 12 patients were completely cured, 4 patients were markedly improved and 2 patients were moderately improved.

KEYWORDS: Swarabheda, Vasadi Kwatha, Eladi Gutika, Hoarseness of Voice.

# INTRODUCTION

Speech is an essential part of human culture and thus of human evolution and language is the mechanism by which the aggregated knowledge of human cultures is transmitted. Humans have retained a strange vocal tract that enhances the robustness of speech. Hence, we could say that-

# "We are because we can talk"

Thus,voice is a part of our personality and any deformity regarding our voice affects our physical as well as mental health. One such condition is called- **Hoarseness of voice**- which is defined as roughness of voice resulting from variations of regularity, periodicity or intensity of consecutive sound waves. [2]

Swarabheda can be correlated to Hoarseness of Voice, due to similarity in their signs and symptoms. Swarabheda has been mentioned by various Acharyas in their texts like Charaka Samhita, Sushruta Samhita, Ashtang Sangraha, Ashtang Hridya, Sharangdhar Samhita, Bhava Prakasha, Yoga Ratnakara, Chakradutta

etc. and even *Acharyas* like *Sushruta* has dedicated a whole chapter on *Swarabheda* in *Uttar Tantra* of his *Sushruta Samhita*, [3] which throws light on the fact that this condition would have been very prevelant at that time also and thus, has got such importance.

Acharya Sushruta has detailed subtle description of 6 types of Swarabheda out of which 3 are nominated as incurable. [4]

According to *Acharyas*, the aggravated *doshas* invade and localize in the vocal cords and bring about the changes in the functions of voice box. Due to this dysfunction, the speaking ability is altered or lost (either partially or fully). This condition is described as-either *Swarabheda or Swaraghana*, <sup>[5]</sup> but *Swaraghana* is complete and permanent loss of voice, which can not be treated and is an incurable condition

Swarabheda (HOV) is commonly encountered due to the infections as in laryngitis and the dietary habits of taking fat rich, spicy, sour and cold food items, which lead to

acid reflux. It also occurs due to abuse or misuse of voice as in hawkers, singers, teachers etc. There are also so many other causes like benign vocal cord nodules, cysts, polyps, cancer of the larynx and many others. <sup>[6]</sup>

Till date the treatment remedies available for the hoarseness of voice in contemporary medicine are generally decided on the basis of the type and extent of pathology or causative factors, but it is quite expensive in nature and many patients are not willing to undergo surgery. Steroids, antibiotics and analgesics are the main stay in the treatment of H.O.V. These medicines can give only temporary relief to the patients and cannot check the reccurence of the disease. Repeated administration of these medications lead to so many side effects like decreasesd immunity, allergic reactions etc. and in more severe cases involving tumours, polyps. [8] etc. surgical intervention is indicated. There are number

of complications of surgery and even again reoccurence of masses take place.

Keeping in view the pathogenesis, [9] of *Swarabheda*, *Vasadi kwatha* and *Eladi gutika* for oral use have been selected for the study.

The ingredients have the properties which have a soothening effect on the mucosa along with the antiinflammatory, antimicrobial & decongestant action. Thus these drugs not only cure the *Swarabheda* but also improve the quality of voice production by augmentation of *Agni bala*. These formulations are best possible, not only in reducing symptoms but also in curing the disease along with its root cause. Thus, help in minimizing the recurrence and in checking the disease at early stages, which ultimately prevents the patients to land into severe conditions which require surgery and can be dreadfull.

#### MATERIALS AND METHODS

Vasadi kwatha: (Sha.M.Kh.2/149-150)<sup>[10]</sup>

Sr.No.	Name of plant	Botanical name	Family	Part used
1.	Vasa	Adhatoda vasaca Nees.	Acanthaceae	Leaves
2.	Vishwa	Zingiber officinale Rosc.	Zingiberaceae	Rhizome
3.	Amrita	Tinospora cordifolia Will. Miers ex Hook F. L. Thoms.	Menispermaceae	Stem
4.	Daarvi	Berberis aristata D.C.	Berberidaceae	Root,stem &fruit
5.	Raktchandan	Pterocarpus santalinum Linn.	Papilionaceae	Heartwood
6.	Chitraka	Plumbago zeylanicum Linn.	Plumbaginaceae	Root
7.	Bhunimba	Andrographis paniculata Nees.	Acanthaceae	Whole plant
8.	Nimba	Azadirachta indica A. Juss.	Meliaceae	Bark
9.	Katuka	Picrorhiza kurroa Royle ex Benth.	Scrophulariaceae	Rhizome
10.	Patola	Trichosanthes dioica Roxb.	Cucurbitaceae	Leaves
11.	Haritaki	Terminalia chebula Retz.	Combretaceae	Fruit
12.	Bhibhitaka	Terminalia bellirica Roxb.	Combretaceae	Fruit
13.	Amalaki	Emblica officinalis Gaertn.	Euphorbiaceae	Fruit
14.	Mustaka	Cyperus rotundus Linn.	Cyperaceae	Rhizome
15.	Yava	Hordeum vulgare Linn.	Poaceae	Seed
16.	Kalingaka	Holarrhena antidysentrica Linn. Wall	Apocynaceae	Seed
17.	Kutaja	Holarrhena antidysentrica Linn. Wall	Apocynaceae	Bark

# Rasa Panchaka

Rasa	Tikta
Guna	Ruksha
Virya	Sheeta Ushna
Vipaka	Katu
Dosha karma	Kaphapittashamaka

### Method of Preparation of Vasadi kwatha

All the ingredients of *Vasadi kwatha* mentioned in table no.1 were sun dried properly and then, a coarse powder was made in the pulveriser.

The prepared coarse powder (dry kwatha) was packed.

2	Eladi gutika:	(Ch Chi 11	/21-24\ <sup>[11]</sup>
4.	Liuui guiika.	(Cn,Cm,II)	/41 <b>-</b> 4 <del>4</del> )

Sr. No.	Plant name	Botanical name	Family	Part used	Quantity	
1.	Chhotiela	Elettaria cardamomum Maton.	Zingiberaceae	Seed	1 part	
2.	Tejpatra	Cinnamomum tamala Breyn.	Lauraceae	Leaves	1 part	
3.	Twaka	Cinnamomum zeylanicum Breyn.	Lauraceae	Bark	1 part	
4.	Pippali	Piper longum Linn.	Piperaceae	Fruit	4 parts	
5.	Sita	Crystallized sugar			8 parts	
6.	Madhuka	Glycyrrhiza glabra Linn.	Leguminaceae	Root	8 parts	
7.	Kharjoora	Phoenix sylvestris Roxb.	Palmaceae	Fruit	8 parts	
8.	Mridwika	Vitis vinifera Linn.	Vitaceae	Fruit	8 parts	
9.	Madhu	Honey				

#### Rasa Panchaka

Rasa	Madhura
Guna	Laghu & Snigdha
Virya	Sheeta
Vipaka	Madhura
Dosha karma	Vatapittashamaka

# Method of Preparation of Eladi Gutika

For preparation of *Eladi gutika*, firstly, *Madhuka*, *Choti Ela*, *Twak*, *Tejpatra*, *Pippali* and *Sita* were finely powdered individually and sieved through the mesh no. 85. Then, the pastes of *Mridwika and Kharjoora* were prepared separately. And then, pastes and powders were mixed homogenously and the prepared mixture was triturated with the honey till the consistency of bolus become suitable for the gutika making. Lastly, *Gutikas* were made manually. Prepared gutikas were then packed in air tight containers.

# Selection criteria

Uncomplicated patients with signs and symptoms of Swarabheda, attending OPD of Shalakya Tantra Department of RGGPG *Ayurvedic* College and Hospital, Paprola were selected above the age of 15 years, irrespective of sex, religion and occupation etc.

### **Investigations**

Haematology – Hb%, TLC, DLC, ESR, LFT, RFT, AEC. Biochemistry – FBS, Lipid profile, Thyroid function test. These investigations were done to rule out any pathologies which were mentioned in exclusion criteria.

#### **Aims & Objectives**

- To study the *Swarabheda* roga according to *Ayurvedic* as well as modern concept to avail latest information related with research as possible.
- To study the efficacy of Vasadi kwatha and Eladi gutika in context of Swarabheda.

## i) Irritation of throat

No irritation in throat
Mild irritation (Intermittent)
Continuous but not incapacitating normal activity
Continuous and incapacitating normal activity

 To avoid its complication sequel and to study the side effect/toxicity of the drugs if any.

#### A. Inclusion Criteria

- Patients presenting with signs and symptoms of Swarabheda occurring due to non specific inflammatory conditions of larynx without any complications.
- Age above 15 years irrespective of sex caste and religion etc.
- Patients willing for the trial.

# B. Exclusion criteria

- 1. Patients below 15 years of age.
- Paralysis of recurrent and superior laryngeal or both nerves.
- 3. Tumours Benign and Malignant.
- 4. Congenital Laryngeal web, cyst, laryngocele.
- 5. H.O.V. occurring due to specific infections e.g. Tubercular and fungal infections.
- 6. H.O.V. due to systemic diseases like Diabetes Mellitus and Hypothyroidism.
- Presence of other somatic or mental disorders requiring treatment.
- 8. Patients not willing to be registered for the trial.
- 9. Immuno-compromised patients.

# **Clinical Assessment**

Assessment of the effect of treatment has been done on the basis of relief of subjective signs and symptoms of Hoarseness of voice on the basis of grading and scoring system.

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ii) Sore Throat Absence of pain in throat Intermittent pain Persistent pain not incapacitating normal activities Persistent pain incapacitating normal activities	0 1 2 3
iii) Odynophagia No pain during swallowing Pain during solid swallowing Pain during liquid swallowing Persistent pain	0 1 2 3
iv) Dysphagia Able to eat regular diet Difficulty to eat solid diet Difficulty to eat liquid diet Difficulty to eat any thing	0 1 2 3
v) Cough Absent Less oftenly Present occasionally during eating and speaking Usually all the time	0 1 2 3
vi) Halitosis Absent Knows himself Other people feel Nobody sits around him	0 1 2 3
vii) Change in voice No change Voice change noticed by patient only Voice change noticed by other people No phonation	0 1 2 3
viii) Fever Below 99°F 99 – 100°F 101 – 102°F 103 – 104°F ix) Congestion in pharynx	0 1 2 3
No congestion Thread like enlarged veins Thorough congestion with pinkish mucosa Thorough congestion with reddish mucosa	0 1 2 3
x) Congestion in larynx No congestion Thread like enlarged veins Thorough congestion with pinkish mucosa Thorough congestion with reddish mucosa	0 1 2 3

# **Drug Schedule**

Vasadi Kwatha and Eladi Gutika as oral drugs.

# Dosage

Vasadi Kwatha - 40 ml in two divided doses.

Method of preparation of kwatha - Patients were asked to prepare kwath from the coarse powder. 10gm coarse powder should be boiled with 8 parts of water until one fourth quantity is left ie. 20ml.

Eladi Gutika - 1 Karsh<sup>12</sup> ie. 12gm in divided doses (in the form of tablets).

Duration

Vasadi kwatha For 14 days Eladi gutika For 14 days

# **Duration of Treatment- 14 days**

Follow up - Two follow ups at weekly interval.

# **Statistical Analysis**

The information regarding demographic data was given in percentage. The scoring of criteria of assessment was analysed statistically in terms of mean values of B.T. (Before Treatment), A.T. (After treatment), S.D. (Standard Deviation), and S.E. (Standard Error). The effect of therapy in was assessed by applying paired ttest for comparing the before treatment and after treatment scores of assessment criteria. The results obtained were considered highly significant for p< 0.001 or <0.01, significant for p<0.01 and insignificant for p >0.05.

# Criteria For Over All Assessment

The total effect of the therapy was assessed considering the following criteria.

- Complete remission: 100% relief in the signs & symptoms.
- Markedly Improvement: > 75% relief in the signs & symptoms.
- Moderately Improvement: > 50% relief in the signs & symptoms.
- Mild Improvement: > 25% relief in the signs &
- Unchanged: < 25% relief in the signs & symptoms.

#### **Observations**

In present study, 27.78% of the patients were of age group 26-35yrs .Maximum patients were females .i.e. 55.56% and only 44.44% patients were males, maximum number of patients i.e.66.67% were married, 94.44% of the patients were Hindus. 33.33% of patients were Students followed by housewives and businessmen (22.22% each). 50% of the patients were lower middle class and 27.78% were upper middle class, 55.56% of the patients were taking mixed diet. 33.33% patients were having addiction to tea/coffee, Maximum patients were of Vata-Kaphja Prakriti.i.e. 50% of the patients, 55.56 % of the patients were of *Vishamagni*, followed by 27.78% patients were having *Mandagni*. Maximum no. of the patients were Under Graduates (27.78%) followed by patients educated upto matric and graduation. Most of the patients were having Avara satva, 44.45%; 55.55% were having Madhyama samhanana and 50% were having Madhyama sara. 55.55% patients were having Madhyama vyayama shakti. 33.33% patients each have vocal abuse and cold food items as aggravating factors. 100% patients have acute stage of laryngitis.

In the present study, Irritation of throat was observed in 55.55% patients, Sore throat was observed in 94.44% patients, Odynophagia in 11.11%, Fever in 16.67% patients, Halitosis in 33.33% patients, Dysphagia in 50% paients, Congested pharyngeal wall in 100% patients, Congested larynx in 100% patients, Change in voice in 100% patients and Cough was observed in 61.11% patients.

# Effect of therapy.

Sr.	Signs and	N	Me	ean	X (d)	%age	SD	SE	Т	P
No.	Symptoms	11	BT	AT	BT-AT	relief	SD	SE	1	r
1.	Irritation of throat	10	0.611	0.00	0.611	100	0.608	0.143	4.267	< 0.001
2.	Sore throat	17	1.333	0.167	1.167	87.47	0.514	0.121	9.621	< 0.001
3.	Odynophagia	02	0.111	0.00	0.111	100	0.323	0.0762	1.458	>0.05
4.	Fever	03	0.167	0.00	0.167	100	0.383	0.0904	1.844	>0.05
5.	Halitosis	06	0.333	0.00	0.333	100	0.485	0.114	2.915	=0.010
6.	Cough	11	0.667	0.00	0.667	100	0.594	0.140	4.761	< 0.001
7.	Congested Pharynx	18	1.722	0.167	1.556	90.3	0.571	0.121	12.907	< 0.001
8.	Congested Larynx	18	1.667	0.167	1.500	89.9	0.514	0.121	12.369	< 0.001
9.	Dysphagia	09	0.444	0.00	0.444	100	0.511	0.121	3.688	< 0.01
10.	Change in voice	18	1.833	0.222	1.611	87.8	0.608	0.143	11.248	< 0.001

- 1. Irritation of throat: The initial mean score of irritation of throat before treatment was 0.66 which was reduced to 0.00 after treatment. The percentage relief was 100% which is highly significant statistically at the level of p < 0.001 (t = 4.267).
- 2. Sore Throat: The initial mean score of soare throat before treatment was 1.333 which was reduced to 0.167 after treatment. The percentage relief was 87.47% which is highly significant statistically at the level of p < 0.001 (t = 9.621).
- 3. Odvnophagia: The initial mean odynophagia before treatment was 0.111 which was reduced to 0.00 after treatment. The percentage relief was 100% which is not significant at the level of p > 0.05 (t = 1.458).
- 4. Fever: The initial mean score of fever before treatment was 0.167 which was reduced to 0.00 after treatment. The percentage relief was 100% which is not significant statistically at the level of p > 0.05 (t = 1.844).
- Halitosis: The initial mean score of halitosis before treatment was 0.333 which was reduced to 0.00 after

treatment. The percentage relief was 100% which is significant statistically at the level of p=0.010 (t = 2.915).

- **6. Cough:** The initial mean score of **cough** before treatment was 0.667 which was reduced to 0.00 after treatment. The percentage relief was 100% which is highly significant at the level of p < 0.001 (t = 4.761).
- **7. Congested pharyngeal wall:** The initial mean score of **congested pharyngeal wall** was 1.722 which was reduced to 0.167 after treatment. The percentage relief was 90.3% which is highly significant at the level of p < 0.001 (t = 12.907).
- **8.** Congested larynx: The initial mean score of congested larynx was 1.667 before treatment which was reduced to 0.167 after treatment. The percentage relief was 89.9% which is highly significant at the level of p < 0.001 (t = 12.367).
- **9. Dysphagia:** The initial mean score of **dysphagia** was 0.444 before treatment which was reduced to 0.00 after treatment. The percentage relief was 100 % which is significant at the level of p < 0.01 (t = 3.688).
- **10. Change in voice:** The initial mean score of **change in voice** was 1.833 which was reduced to 0.222 after treatment. The percentage relief was 87.8% which is highly significant at the level of p < 0.001 (t = 11.248).

**Overall result of therapy:** Out of 18 patients in trial group

- 12(66.67%) patients were completely cured,
- 4(22.22%) patents were markedly improved and
- 2(11.11%) patients were moderately improved.

# DISCUSSION

- Sushruta says that Swarabheda is a vyadhi of Swaravaha srotasa and occurs due to vitiation of kapha and vata doshas. Due to different etiological factors Vatadi Doshas become aggravated and localise in Swaravaha Srotas leading to destruction of voice and thus cause Swarabheda. (Su.U.53/3)<sup>[13]</sup>
- Acharya Sushruta has detailed subtle description of 6 types of Swarabhedas out of which 3 are nominated as incurable. [14]
- The disease Swarabheda is Vata-kapha predominant disease and maximum patients registered in the present study were having the symptoms of Vataj and Kaphaj Swarabheda like Okkrsu d''.ku;ukuu (congestion in throat & sore throat), "kwdiw. kZkHkd. BRoa,[kqj[kqjk;rs (foreign sensation in throat, irritation & pricking sensation in throat). r={kkeks :{kÜpy%Loj, "kuSoZnfrpkfi,[15] (weak, rough, slow, breathy & vibratory voice), dQ:)d.Bks, [16] (sticky mucus on or close to vocal cords) etc. Moreover, most of the patients were of the younger age group (kapha predominance), females dosha vata predominance due to vegasandharana etc habits,

vata kapha predominant due to dietary habits, vishmagni leading to vata predominance and were having vatakaphaj deha prakriti.

### Probable mode of action of drugs

- Vasadi kwatha: These all factors and observations showed that, in the present study, there were maximum cases of Vataja and Kaphaja Swarabheda and hence, for their treatment, Vata and kapha shamaka drugs should be used. Vasadi kwatha is having dominance of Tikta rasa 37.14%, Ruksha guna 37.84%, laghu guna 35.13%, Sheeta virya 52.94% and Ushna virya 47.06% and thus, Sheetaushna virya, katu vipaka 64.70%, and dosha Vatakaphashamaka 5.55% and kaphapitta shamaka 61.11% which can pacify vitiated vata & kapha doshas responsible for the disease. The oral use of this drug produces deepana, pachana effects as katu, tikta properties improves Jatharagni. The lekhana properties of drugs will cleanse the channels and thus relieves the srotorodha. The disease is accompanied by change in voice and pain due to vitiation of kaphavata dosha which is pacified by dosha karma of Kaphapittashamaka and Vatakaphashamaka.
- 2. Eladi Gutika: It is having dominance of Madhura ras 53.33%, Laghu and Snigdha guna 21.74% each, Sheeta virya 66.67%, Madhura vipaka 66.67% and dosha karma of Vatapittashamaka 36.36% and Kaphavatashamaka 18.18%. The dosha karma of Eladi gutika is countering the samprapti of Swarabheda.

The ingredients of *Eladi gutika* have *deepana*, *pachana* and *vatanulomana* properties and are *lekhaniya* which relieves *srotorodha*. Also, due to other properties like *mukhashodhana*, *mukhadurgandha nashaka*, *kaphanisaraka and kanthaya*, this formulation is useful in relieving the signs and symptoms of *Swarabheda*.

# Overall probable mode of action of the therapy

The disease *Swarabheda* occurs in *Kantha Pradesha* in *swaravaha srotasa* and is mainly due to vitiation of *kapha* and *vata doshas*. Disturbance of *agni* results in *ama* formation which by itself may culminate in various ailments. It can also be assumed that the body defense mechanism is affected or the immune system of the body is decreased.

The formulations- Vasadi kwatha and Eladi gutika have Kaphapittashamaka and Vatapittashamaka dosha karma respectively. These formulations when used in combination counteract the samprapti of the disease Swarabheda which involves the Kapha and Vata dosha.

Apart from these facts, the constituents of the combination also have potentially proven pharmacological actions like anti-inflammatory, anti pyretic, antibacterial, decongestant, analgesic, soothing effect, mucolytic and ulcer healing context which can counteract various signs and symptoms of the disease. Thus, the above description regarding the

pharmacotherapeutic properties of trial drugs proves their action in Swarabheda for its cure and prevention.

#### CONCLUSION

Conclusions drawn from the present study summarized as follow:

- After studying Ayurvedic texts, it is concluded that Swarabheda is mainly Kapha and Vata dominant
- The formulations Vasadi kwath and Eladi gutika used in the present trial are Kaphavatashamaka & Vatapittashamaka respectively and thus, effective in Swarabheda.
- Regarding H.O.V., it is seen in the modern texts that
- 1. H.O.V. is mainly caused by laryngitis, although, there are number of other causes also.
- H.O.V. due to acute laryngitis is very common.
- If we see the Ayurvedic and Modern literaure of Swarabheda and H.OV., correlation between both of them can be established.
- In the present study, 100% patients were of acute laryngitis.
- Maximum patients were students, because they are indulged in apathy sevana like cold and spicy junk
- Maximum patients belonged to rural area because they are not much educated and thus, not aware of the harmful effects of vocal abuse.
- Symptoms like change in voice, congested pharyngeal wall and larynx were present in 100% of the patients under trial.
- The result of the treatment on H.O.V. occuring due to non – specific laryngitis was satisfactory.
- The treatment modality used in the present study is proved cheap and effective and has high healing
- The result showed that the therapy provided significant relief. In Irritation of throat, there was 100% relief; in Sore throat, there was 87.47% relief; in Odynophagia, there was 100% relief; in Fever, there was 100% relief; in Halitosis, there was 100% relief; in Congestion over mucosa of pharyngeal wall, there was 90.3% relief; there was 89.9% relief in Congestion in larvnx; in change in voice, there was 87.8% relief; in Dysphagia, there was 100% relief and in Cough, there was 100% relief.
- The formulations used in present trial do not show any serious complications except; a single adverse effect ie. Burning sensation in epigastric region during the course of trial only in one patient. But this didn't create any hurdle in the completion of the treatment regimen of the patient. This problem was resolved by slight lifestyle modifications like patient was advised to have plenty of water and prop up position.

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