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ORIGINAL RESEARCH ARTICLE

CLINICAL STUDY ON YAVAKSHARADI VATI AND PANCHVALKAL KWATH IN THE MANAGEMENT OF TUNDIKERI W.S.R. TO TONSILLITIS

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ABSTRACT

Background: *Tundikeri* is commonly encountered now-a-day due to the dietary habits of taking spicy food cold beverage and cold climate.Antibiotics are the main stay in treatment of tonsillitis as far as the allopathic system of medicine is concerned. Repeated administration of antibiotics may lead to many side effects in the patients. If there are indications that the patient might have to undergo tonsillectomy and being first barrier to pathogens and site of antibody production, then their removal put a straight forward attack on our respiratory and gastrointestinal tracks and further more surgical procedure has its own complication also. **Methods:** Total 20 Patients were selected from the *Shalakya Tantra* (ENT Unit) OPD of the hospital affiliated to R.G.Govt. P.G. Ayurvedic College, Paprola, Distt.Kangra (HP), for the present study. **Results:** Enlarged tonsils were relieved by 46.51% which is significant statistically ($p<0.001$). Congestion over tonsils and pillars was relieved by 90.38% which is significant statistically ($p <0.001$), cough was relieved by 83.33% which is insignificant statistically ($p>0.05$), fever was relieved by 84.30% which is significant statistically ($p<0.001$), debris over crypts was also relieved by 43.10% ($p>0.05$) which is insignificant statistically. **Conclusion:** Oral administration of *Yavaksharadi Vati* and *Kavala* (gargling) with *Panchavalkala Kwathaa* provided better therapeutic efficacy. During the clinical study any type of minor or major complications was not observed in patients in study.

Key Words: Tonsillitis, Tundikeri, Yavaksharadi Vati, Kavala, Panchavalkala Kwathaa

INTRODUCTION

Tundikeri is commonly encountered now-a-day due to the dietary habits of taking spicy food cold beverage and cold climate. Lower socio-economic group people are particularly prone as the immunity status is low in them. These factors coupled together results in recurrent episodes of disease. *Tundikeri* not only cripples children from majority of their enjoyable and learning movement but also makes adults to feel uneasy, restless and even bed ridden, if complication occurs.

Antibiotics are the main stay in treatment of tonsillitis as far as the allopathic system of medicine is concerned[1]. They can give temporary relief to the patient but cannot check the recurrence of the disease. Repeated administration of antibiotics may lead to many side effects in the patients. If there are indications that the patient might have to undergo tonsillectomy[2] also with the antecedent rise of post-operative bleeding and being first barrier to pathogens and site of antibody production, then their removal put a straight

forward attack on our respiratory and gastrointestinal tracks and further more surgical procedure has its own complication also.

In Ayurveda, *Tundikeri* has been described under the *Mukharoga (*orodentaldisordes). *AcharyaCharaka* has classified the disease of *Mukha* on the basis of predominance of *Doshas*[3]. *Acharya Sushruta* has enumerated it under *Talu gat roga*[4](diseases of palate) *and Acharya Vagbhatta* has kept it under *Kantha gat roga*[5] (diseases of neck).

Acharya Charaka has mentioned medicinal treatment of *Mukharoga*. *Acharya Sushruta* has put forward the *chikitsa (treatment)* of this particular disease as per the lines of the disease '*Gala shundika'* followed by local application of drugs having properties of *Lekhana (*scraping*), Shothahara (*anti-inflammatory*), Sandhaniya (*reconstruction*), Ropana(healing), Raktastambana (*blood cloting*) and Vedana Sthapana (analgesic)*[6]. He has also enumerated *Tundikeri* under classification of *Bhedyaroga(Puncturing)* in *Sutra sthana*[7].

Similarly references are available regarding this disease in a more elaborated manner in *Ashtangahridya*; particularly its site of origin and another is of the opinion that the disease *Tundikeri* occurs at the site of *Hanusandhiashrit KanthaPradesh*[8]. *Acharya Vagbhatta* has also quoted the surgical measures for treating this disease[9].

Many formulation or drugs have been written for *Mukharoga* in the various texts books. But as yet no such standard line of management could be made which can lessen the agony felt by the patients of *Tundiker*i. Taking the above mentioned facts in mind and to bring out patient from uneasiness, frustration, pain and productive for the society, a sincere effort has been made in the present study entitled "Clinical study of *Yavaksharadi Vati* and *Panchvalkal Kwath* in the Management of *Tundikeri*w.s.r. to "Tonsillitis".

After doing critical review of *Ayurvedic* literature, two formulations were selected. One of them was *Yavaksharadi Vati*[10] and the other one *Panchavalkala Kwatha*[11], which had been made in the form of the *Yavakut.* These formulations have been mentioned in almost all the *Ayurvedic* texts. So to know the effectiveness of these drugs over *Tundiker*i, these two yoga had been selected for the present trial. Drugs in the formulation have properties like *Raktshodhana, Vednahara, Ojkara, Vishhara, Jvarhara, Sothahara, Lekhana* etc. with the *dosha karma of Pitta kaphahara* which could be very beneficial in the *Kapharakta* dominating disease.

AIMS AND OBJECTIVES

To study the efficacy of combination of *Yavaksharadi Vati* and *Panchavalkala Kwatha* in context of *Tundikeri* (tonsillitis).

MATERIALS AND METHODS

Study Design: Single arm, randomized, Clinical Trial.

Trial Drug Details:

For the present study, the trial drug *Yavksaradivati* and *Panchavalkala Kwatha* have been selected. These compound drugs are mentioned in Chakradutta, Bhaishajyaratnavali and Yogratnakar. The above two drugs have been selected from the formulations for *mukharoga* in Chakradutta to establish the effectiveness of *yavksaradi vati* and *panchvalkala kwatha* on the disease *Tundikeri* and to prevent the surgery for this disease.

Yavksharadivati- Vati is made by *Yavakshar* (*Hordeium vulgare)*,*Patha* (*Cissamplelos pareria)*, *Daruharidra (Berberis aristata),Pippli (Piper longum),Tejbal (Zanthoxylum alatum)* and Madhu.When the shrub is fully ripe, the whole plant is taken and is dried up. A heap of this dried plant is then burnt, the ash thus obtained is dissolved in eight times of water for 24 hours. The clear water from above is filtered and is kept till it evaporates completely. The material left in pan after evaporation is called *Yavakshara*. In the last madhu is added and vati are prepared.

Panchavalkala Kwatha- Five plants are considered under the heading of *panchvalkal i.e. Vata (Ficus bengalensis), Udumbara (Ficus glomerata), Ashwatha (Ficus religiosa), Parisha (Thespesia populnea), and Plaksa(Ficus lacor).*

Study Sample- Patients affected with Tundikeri, irrespective of age, sex, caste and religion, attending the *ShalakyaTantra* (ENT Unit) OPD of the hospital affiliated to R.G.Govt. P.G. Ayurvedic College, Paprola, Dist.Kangra (HP) were selected for this study.

Sample Size- The sample size for present study was 20 patients.

Study Settings – Study was started in February 2010 and completed in January 2011.

Inclusion Criteria -

Patients above age group of 5 years having features of Tonsillitis as follows-

- Enlarged tonsil
- Sore throat
- Congestion over uvula and soft palate, tonsils and pillars
- Debris over tonsils crypts
- Jugulodigastric lymphadenopathy

Exclusion Criteria-

- Patient with complication of Tonsillitis like peritonsillar abscess and parapharyngeal abscess etc.
- Malignancy, syphilis or TB presenting as tonsillar disease, diabetes mellitus or hypertension.
- Presence of other somatic or mental disorders requiring treatment.
- Immuno-compromised patients.
- Patients not willing to be registered for the trial.

Withdrawal criteria: Same as exclusion criteria.

Lab Investigations:

a)Haematological Examination: Hb%, T.L.C., D.L.C., E.S.R., B. Sugar (Fasting)

b) Urine Examination: Routine, Microscopic

Grouping- There was only single group for study.

Intervention:

Drug- *Yavaksharadi Vati* orally and *panchvalkal kwath*

Dose- *Yavaksharadi Vati* orally 500mg tid and *panchvalkal kwath* for *kawal* 50 ml bid.

Anupana- Madhu was used as a Anupan for *Yavaksharadi Vati*

Duration- The trial of therapy was carried out up to 15 days.

Time of administration- Both the drugs was used three times.

Follow-up- Follow up was done after completion of trial every week for 4 weeks.

Criteria of Assessment of Results-

Subjective :

Grading and scoring system was adopted for assessing each sign and symptom before thecommencement of trial and after completion of

trial. The overall score of each sign and symptom was recorded as:-

Absence of sign or symptom- 0

Presence of a sign or symptom in mild degree- 1

Presence of a sign or symptom in moderate degree- 2

Presence of a sign or symptom in severe degree- 3

In the present research work following sign/symptoms were recorded and scoring was done as given below in the table 1

Table 1: Grading of signs and symptoms

Signs and Symptoms	0	1	2	3
Enlarged tonsil	Tonsils are located within the tonsillar fossa.	Tonsils hypertrophy till the brim of the tonsillar fossa	Tonsil hypertrophy extends beyond the pillars but not touching each other	Tonsils are in contact with each other (kissing tonsils)
Sore throat	No pain in throat	Pain not continuous	Continuous but not incapacitating normal routine activity.	Continuous and incapacitating normal routine activity.
Odynophagia	No pain during deglutition	Not continuous pain during deglutition	Continuous pain during deglutition	Not able to deglutition
Dysphagia	Able to eat regular diet	Able to eat solid diet	Able to eat liquid diet	Not able to eat & drink
Congestion over tonsils and pillar	No congestion	Thread like enlarged vein	Thorough of congestion over tonsils	Thorough of congestion over tonsil and pillars
Congestion over uvula and soft palate	No congestion	Thread like enlarged vein	Thorough of congestion over uvula only	Thorough of congestion over uvula and soft palate
Earache	No earache	Not continuous	Continuous but not incapacitating normal routine activity.	Continuous and incapacitating normal routine activity.
Cough	Absent	Less oftenly	Present occasionally like during eating or speaking	Usually all time
Fever	Absent	99-100^{0}F	101-102^{0}F	103- 104^0 F
Debris over Crypts	0	1 – 10	11 – 20	21 – 30
Jugulo-digastric lymphadenopathy	No palpation of lymph nodes	Deep palpation of lymph nodes	Superficial palpation of lymph nodes	Visible lymph nodes
Halitosis	Absent	Halitosis from 1-5	Halitosis from 5-50	Halitosis form 50-75 cm

		cm	cm	
Change in voice	No change	Patient himself know change the Voice	Patient and other person know change the voice	No phonation

Statistical Analysis -

The information gathered regarding demographic data was given in percentage. The scoring of criteria of assessment was analysed statistically of B.T. (Before Treatment), A.T.(After Treatment), X (BT-AT), S.D. (Standard Deviation)and S.E.(Standard Error) SD/ √n . Paired 't' test was carried out at level of $p<0.05$ and $p<0.001$.

Overall results were adjudged in terms of percentage relief obtained in signs/ symptoms.

Cured- 100% relief

Markedly improved- >75% relief

Moderately Improved- >50% < 75% relief

Improved- > 25% < 50% relief

Unimproved- <25% relief

Objective Criteria -

a)Haematological Examination - Hb%, T.L.C., D.L.C., E.S.R., B. Sugar (Fasting)

b) Urine Examination.

RESULTS

Demographic profile

Maximum No. of patients were of age group 5-15 years (45%), were males 65%, unmarried 80%, Hindu 100%, resident of rural area 75%, student 80%, belonged to middle class 50%, and vegetarian 55%. Majority of the patients had pitta *kaphajaprakriti* 70% with *Madhyamasattva* 50%, *Avarasara* 45%, *Pravarasamhanana* 40% and *Mandagni* 30%. In majority of the patients were having no addiction 75%. In majority of patients(25%), sweets was aggravating factor while 20% complained of curd and cold beverages as an aggravating factor.

Clinical profile

Majority of patients were having chronic parenchymatous 40%. All thepatients (100%) had enlarged tonsil, Sore throat and congestion over tonsils and pillars.80% had odynophagia, 75% had jugolodigastric lymphadenopathy, 50% had dysphagia, 40% had congestion over uvula and soft palate, 40% had fever, 30% had earache, 25% halitosis and 20% had cough.

DISCUSSION

Acharya Sushruta stated that *shopha, shula, toda, daha and prapaka* and collectively seen in *Tundikeri.* These signs and symptoms are co-related with acute tonsillitis i.e. *shophasthola* - enlarged tonsil, *Daha*– burning sensation, *prapaka* – suppuration.

Acharya Sushruta has described two *hanusandhi* and location of *Tundikeri* according to *Acharya Vagbhatta hanusandhyashrita.* so these are in two number.

According to modern text the palatine tonsils are two masses of lymphoid tissue situated in the lateral wall of the oral part of the pharynx.

According to *Acharya Vagbhatta kanthashopha of Karpasiphala* i.e. enlarged tonsil, *pichchil* type discharge i.e. discharge from crypts or debris over tonsil, *mandarukha* i.e. sore throat and kathinshopha i.e. congestion our tonsil. So these signs and symptoms can be co-related with *Tundikeri* to Tonsillitis.

From above discussion we can conclude that in Ayurveda the signs and symptoms of *Tundikeri* in a very brief manner as Tonsillitis.

Demographic profile

Majority of the patints were in the age group of 5-15years followed by 15-25 age groups. Textual references also reflect that disease is *Kapha dosha* predominant and *Kapha* is also dominant in *Balaawastha* (childhood) which is upto 30 years[12]. All the patients were Hindus because this area (where the trial was conducted) is a Hindu dominated area. So nothing can be drawn from this observation. Majority were males. Males are more prone to exposure with external pathogens as they remain outside the home for long time and may sometime follow *apathya* which lowers the *agn*i. They also have addiction of certain things like smoking, which aggravate the recurrence of disease. Majority of patients were unmarried. This percentage signifies two things that it is the disease of young ones and falls under the unmarried age groups which mostly occurs upto 25 years. Majority from rural area shows the disease mostly occur in people who live in unhygienic conditions. Maximum number of patients were student by occupation. In school going students, the habit of taking *Apathya* is more and they take uncovered, unhygienic, eatables which further aggravate the disease occurrence, so the percentage is high in students. Most of the patients were vegetarian. Higher incidence in vegetarian may be due to the intake of Madhura*, Guru, Snigdha and Abhishyandiaahara* which causes *Agni mandata* and *Aamoutpatti*. Majority of patients were having *Pitta kaphaja prakriti*. As the disease is *Kapharakta* dominating, the person with the similar *doshaja prakriti* are more prone.

Maximum patients were having *Madhyamasattva. Sattva* holds much importance in outcome of the disease, as during the acute attack, patient may lose desires and there is failure to carryout voluntary movements. Hence people with *Avarasattva* may not get improved in spite of all needed management. Sara is essence of *Dhatus*. Here in present study, majority of the patients were having *Avarasara. Avarasara* patients become prone to disease very often and cannot live a healthy life. *Samhanana* is also reflection of healthy body and *pravara samhanan*a never gets diseased. *Sattmya* for every Rasa is good for survival of all the *dhatus* inside body and *Avara of Madhyama satmya* or one rasa of few *rasa satmya* keeps the body unhealthy and make prone to pathogens.

Majority of patients were having *Mandagni, vishamagni and Tikshanagni*. As the disease is *kapha* dominating, so it results is *agnimandta,* moreover *toda, paka* in the disease hamper the intake and ultimately *abhyaharanashakti* also falls down.

Clinical profile

Enlarged tonsils were relieved by 46.51% which is significant statistically ($p<0.001$, $t = 4.36$), in sore throat, there was 85.36% relief ($p<0.001$, $t= 14.22$), in odynophagia, 86.16%, relief which is significant statistically ($p<0.001$, $t=12.19$) Dysphagia was relieved by 84.61% which is also significant statistically ($p<0.05$, $t = 4.71$).

Congestion over tonsils and pillars was relieved by 90.38% which is significant statistically ($p <0.001$, $t = 21.47$), congestion over uvula and soft palate was relieved by 77.16% which is significant statistically ($p<0.001$, $t=7.63$), earache was relieved by 78% which is significant statistically ($p<0.05$, $t = 2.90$), cough was relieved by 83.33% which is non significant statistically ($p>0.05$, $t = 2.61$), fever was relieved by 84.30% which is significant statistically ($p<0.001$, $t = 7.50$), debris over crypts was also relieved by 43.10% ($p>0.05$, $t =2.33$)

which is non-significant statistically, jugulo-digastric lymphadenopathy were relieved by 11.56% which was not significant statistically ($p>0.05$, $t=1.87$), in halitosis was relieved by 87.5% which is significant statistically ($p<0.05$, $t = 5.71$).

Table 2: Effect of therapy on signs and symptoms

Signs and Symptoms	Mean		% age relief	SD±	SE±	't'	P
	BT	AT					
Enlarged tonsil	2.15	1.15	46.51	0.51	0.11	4.36	<0.001
Sore throat	2.05	0.3	85.36	0.55	0.12	14.22	<0.001
Odynophagia	1.81	0.25	86.16	0.51	0.12	12.19	<0.001
Dysphagia	1.3	0.2	84.61	0.73	0.23	4.71	<0.05
Congestion over tonsils and pillars	2.6	0.25	90.38	0.48	0.10	21.47	<0.001
Congestion over uvula and soft palate	1.62	0.371	77.16	0.46	0.16	7.63	<0.001
Earache	1.5	0.33	78	0.98	0.40	2.90	<0.05
Cough	1.5	0.25	83.33	0.95	0.47	2.61	>0.05
Fever	1.625	0.25	84.30	0.51	0.18	7.50	<0.001
Debris over tonsils crypts	1.16	0.66	43.10	0.54	0.22	2.23	>0.05
Jugulodigastric lymphadenopathy	1.73	1.53	11.56	0.41	0.10	1.87	>0.05
Halitosis	1.6	0.2	87.5	0.54	0.24	5.71	<0.05
Change in voice	0	0	0	0	0	0	0

Effect on laboratory parameters

Hb % -The result was significant statistically at the level of $p <0.001$ and improvement is 3.81%.

TLC -The result was not significant statistically at the level of $p>0.05$ with percentage relief of 0.74%.

ESR –The result was significant statistically at the level of $p <0.001$with fall of 41.72%.

Probable mode of action: The disease *Tundikeri* (Tonsillitis) as described in *Ayurvedic* text is *kapha* and *rakta* predominant in which there is presence of oedema, enlargement of tonsil, pricking pain, burning sensation and suppuration. Therefore the present study, trial drugs viz. *Yavaksharadi Vati and Panchavalkala Kwatha* were selected with their valid classical reference. Ingredients of *Yavaksharadi Vati and Panchavalkala Kwatha* possess properties and pharmacological activities supportive for preventive and curative treatment of *Tundikeri* disease. These drugs also possess activities for relief and alleviation of sign and symptoms related to this disease. They are having *kapharaktaharadoshkarma. Yavaksharadi Vati* is having 43.76% of *kaphahara* and 25% of *pittahara dravyas* whereas *panchvalkal kwath* is containing 50% of *kaphahara* and 50% of *pittahara dravyas*.

Major ingredient of *Yavaksharadi Vati i.e. Daruharidra* used in crude form and *Rasanja*n, extract form *Daruharidra*, having properties like

astringent, antibacterial, antipyretic and antiseptic. Alkaloid berberin obtained from *Daruharidra* possesses antibacterial and anti-inflammatory activities. Similar manner *Yavakshar* possesses antipyretic, wound purifying and healing properties; Pippali with its main component piperine alkaloid possesses antimicrobial, antipyretic and immunomodulatory activities[13]; Patha possesses astringent, antipyretic and anti-inflammatory properties[14].

Panchavalkala Kwatha phytochemically dominant in phenolic group components like tannins, flavanoids which are mainly responsible for its excellent activities antiseptic, anti-inflammatory, immune-modulatory, antioxidant, antibacterial, antimicrobial and wound purifying and healing.

Pathogenesis of Tonsillitis mainly involves immune system of body. So to overcome this; drugs acts through their immune-modulatory, anti-inflammatory and astringent properties.

In classical terms, it can be interpreted that *Katu, Tikta, Kashaya rasa, Laghu, Ruksha, Teekshnaguna, Ushnaveerya, Katuvipaak and Kaphapittaghna* properties of drugs are responsible to break the *samprapti* of *Tundikeri* disease.

According to different Ayurvedic texts these drugs are also having properties mentioned against each other which may play a role to break the *samprapti* of disease *Tundikeri*.

CONCLUSION

Oral administration of *Yavaksharadi Vati* and *Kavala* (gargling) with *Panchavalkala Kwathaa* provided better therapeutic efficacy. During the clinical study any type of minor or major complications was not observed in patients in study.

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