



**ROLE OF PIPPALYADI CHURNA AND DARVYADI KWATHA IN THE MANAGEMENT OF TUNDIKERI W.S.R. TO “TONSILLITIS”**

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### INTRODUCTION

*Tundikeri* means the size of *cotton bud*. This disease is mentioned among the diseases of *Talu* by *Sushruta*<sup>1</sup> and in *Kanthagata Roga* by *Vagbhatta*.<sup>2</sup> *Tundikeri* is the most common ailment found now-a-days, which not only cripples children from majority of their enjoyable and learning moments but also makes adults to feel uneasy, restless and even bedridden if complication occurs.

In view of modern sciences, the disease *Tundikeri* can be correlated with Tonsillitis as both the terminologies have similar features like the throat is reddened, the tonsils are swollen and may be coated or have white spots on them.<sup>3</sup> Antibiotics are the main stay in treatment of tonsillitis as far as the allopathic system of medicine is concerned. 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 also with the antecedent rise of post operative bleeding.<sup>4</sup> Tonsils 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*.<sup>5</sup> *Acharya Charaka* has classified the disease of *Mukha* on the basis of predominance of *Doshas*.<sup>6</sup> *Acharya Sushruta* has enumerated it under *Talugata Roga*<sup>7</sup> and *Acharya Vagbhatta* has kept it under *Kanthagata Roga*.<sup>8</sup> *Acharya Charaka* has mentioned medicinal treatment of *Mukharoga*. *Acharya Sushruta* has put forward the *Chikitsa* of this particular disease as per the lines of the disease '*Galashundika*' followed by local application of drugs having properties of *Lekhana*, *Shothahara*, *Sandhaniya*, *Ropana*, *Raktastambana* and *VedanaSthapana*.<sup>9</sup> He has also enumerated *Tundikeri* under classification of *Bhedyaroga* in *Sutra sthana*.<sup>10</sup> *Acharya Vagbhatta* has said that the disease *Tundikeri* occurs at the site of *Hanusandhiashrit Kantha Pradesh*.<sup>11</sup> He has also quoted the surgical measures for treating this disease. *All other Acharyas* have written the same line of treatment. So except surgery no specific formulation of drug has been mentioned.

Taking the above mentioned facts in mind a sincere effort has been made in the present study entitled "*Role of Pippalyadi Churna and Darvyadi Kwatha in the Management of Tundikeri w.s.r. to "Tonsillitis"*". Today,

in light of modern medicine, there is one standard line of management of the disease "*Tundikeri*" (Tonsillitis), i.e. antibiotic and anti-inflammatory therapy or other wise surgical removal of lymphoid tissue. But, the medicinal and surgical, both managements have their own hazards. To find out the best available in *Ayurvedic* texts, two formulations were selected. One of them is *Pipplyadi Churna* (Ch-chi- 26/188) and the other one *Darvyadi Kwatha* (C.Kantha Chi.Prakaran 13/13). 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 & OBJECTIVES

- To study the *Tundikeri* according to *Ayurvedic* concept.
- To study the *Tundikeri* according to modern concept and to avail latest information related with research as possible
- To study the efficacy of *Pippalyadi churna* and *Darvyadi Kwatha* on tonsillitis.

- To study the comparative combined efficacy of *Pippalyadi churna* and *Darvyadi Kwatha* with modern medicine azithromycin on *tonsillitis*.
- To avoid its complication sequel and to study the side effect/toxicity of the drug if any.

**DRUG REVIEW****A) Pippalyadi churna<sup>[12]</sup>**

पिपल्यगुरुदावीत्वग्यवक्षाररसाजनम् ।  
पाठांतेजोवती पथ्यां समभागं विचूर्णयेत् ।  
मुखरोगेषु सर्वेषु सक्षौद्रं तद् विधारयेत् । (च. चि. 26 / 188)

**B) Darvyadi kwatha<sup>[13]</sup>**

क्वाथ पानन्तु दावीत्वगनिम्बतार्क्षकलिंगजम् ।।  
हरीतकीकशायो वापेयो मांक्षिकसंयुतः ।। (चक्र. कण्ठ. चि. प्रकरण  
13 / 13)

**Table No. 1: Rasa panchaka of contents of Pippalyadi Churna taken under trial in depicted in the tabulated form as:**

Sr.	Drug	Rasa	Guna	Veerya	Vipaka	Doshakarma
1.	Pippali	Katu	Laghu, Snigdha, Tikshna	Anuu-shna sheeta	Madhura	Pittashamaka
2.	Agru	Katu, Tikta	Laghu, Ruksha, Tikshna	Ushna	Katu	Kaphavatahara
3.	Daru haridra	Tikta, Kashaya	Laghu, Ruksha	Ushna	Katu	Kaphapitta hara
4.	Twaka	Katu, Tikta, Madhura	Laghu, Ruksha, Tikshna	Ushna	Katu	Kaphavatahara
5.	Yavakshar	Lavana, Katu	Laghu, Snigdha, Sukshma, Tikshna, Sara	Ushna	Katu	Kaphavatahara
6.	Rasanjana	Tikta Kashaya	Laghu, Ruksha	Ushna	Katu	Kaphapittahara
7.	Patha	Tikta	Laghu, Tikshna	Ushna	Katu	Kaphavatahara
8.	Tejibala	Katu tikta	Laghu, Ruksha, Tikshna	Ushna	Katu	Kaphavatahara
9.	Haritaki	Panchrasa, except Lavana, Kashaya dominant.	Laghu, Ruksha	Ushna	Madhura	Tridosahara
10.	Madhu	Madhura	Sukshma, Laghu, Rukshna, Sheeta	Sheeta	Madhura	Tridosahara

**Table No. 2: Rasa panchaka of contents of Darvyadi Kwatha taken under trial in depicted in the tabulated form as:**

Sr.	Drug	Rasa	Guna	Veerya	Vipaka	Doshkarma
1.	Daru haridra	Tikta, Kashaya	Laghu, Ruksha	Ushna	Katu	Kaphapitta hara
2.	Twaka	Katu, Tikta, Madhura	Laghu, Ruksha, Tikshna	Ushna	Katu	Kaphavatahara
3.	Nimba	Tikta, Kashaya	Laghu	Sheeta	Katu	Kaphapittahara
4.	Rasanjana	Tikta Kashaya	Laghu, Ruksha	Ushna	Katu	Kaphapittahara
5.	Indrayava	Tikta, Kashaya	Laghu, Ruksha	Sheeta	Katu	Kaphapittahara
6.	Haritaki	Panchrasa, except Lavana, Kashaya dominant.	Laghu, Ruksha	Ushna	Madhura	Tridosahara
7.	Madhu	Madhura	Sukshma, Laghu, Rukshna, Sheeta	Sheeta	Madhura	Tridosahara

**MATERIALS AND METHODS**

Clinical study has been carried out in two trial group (10 patients each) on twenty patients. In group I (Standard group), trial is done by drug azithromycin 10 mg/kg/day body weight and in group II *PippalyadiChurna* and *Darvyadi Kwatha*. All patients were registered from E.N.T., O.P.D., R.G.G.P.G.Ayu. Hospital and completed the trial. Complete description regarding the details of each research case was recorded in the Performa.

**Criteria for patients selection****a. Inclusion criteria**

Patients presenting with symptoms of *Tundikeri* >5 year of age irrespective of sex, caste and religion.

**b. Exclusion criteria**

- Patients not willing to be registered for the trial.

- Congenital deformity.
- Malignancy of oral cavity.
- Established diabetes mellitus and hypertension

**Technique to be applied:** After careful examination, 20 patients were selected and divided into 2 groups (10 patients in each group):-

**Group - Tab-Azithromycin**

**Group II- Pippalyadi churna with Madhu**  
**Darvyadi kwatha with Madhu**

**Mode of Administration and Dose of Trail Drug****❖ Group I**

- Azithromycin**

**Adult-**Azithromycin-500mg OD orally

**Child-**Azithromycin 10mg/kg body weight/day orally

❖ **Group II**• **Pippalyadi churna**

**Adult-** 5gm Pippalyadi churna +5gm honey local application TID

**Child-**2-3gm Pippalyadi churna+2-3gm honey local application TID

• **Darvyadi kwatha**

**Adult-**20ml Darvyadi kwatha+20ml honey BD orally

**Child-**5-15ml Darvyadi kwatha+5-15ml honey BD orally

**Duration of trial-**

5 days for Group I and

7 days for Group II

**Follow up** - After 5 days for group I and 7 days for group II.

**Criteria of Assessment of Results**

1. Subjective

2. Objective

**Subjective:-**Grading and scoring system was adopted for assessing each sign and symptom before the commencement of trial and after completion of trial. The overall score of each sign and symptom was recorded as:-

- Absence of sign or symptoms 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:-**

**Table No. 3: Grading.**

Sign and Symptoms	Score 0	Score 1	Score 2	Score 3
Sore throat	No pain in Throat	Pain on swallowing the saliva	Painful but cannot easily swallowing the saliva	Patient cannot swallowed the saliva
Dysphagia	No. difficulty during Swallowing	Difficulty during taking solid diet	Difficulty during taking liquid diet	Difficulty during taking solid as well as liquid diet.
Odynophagia	No pain during deglutition	Not continuous pain during deglutition	Continuous pain during deglutition	Not able to deglutition
Size of tonsils	Within the pillar	Outside the pillar	Between 1 and 3 <sup>rd</sup>	Touching each other
Congestion over tonsils and pillars	Normal colour	Pinkish tonsils and pillars	Between 1 and 3 <sup>rd</sup>	Reddened whole tonsil and pillar
Follicles over the tonsils	Absent	1 – 5 follicles	5 – 10 follicles	> 10 follicles
Fever	Absent	99 <sup>0</sup> F – 100 <sup>0</sup> F	101 <sup>0</sup> F – 103 <sup>0</sup> F	> 103 <sup>0</sup> F
Halitosis	No halitosis	Patient feels himself/herself	Attendant also feel from 1 Ft	Difficulty to live with patient ≥2Ft distance
Snoring	Absent	Less often	Often	Always
Cough	Absent	Some time	Present occasionally	All time
Ear ache	Absent	Some time	Intermittent	Always
Debris over tonsils Crypts	Absent	1 –2 mm	3-5 mm	>5 mm
Jugulodigastriclymph adeno-pathy	Absent	No visible but palpable	Visible and palpable but<4cm	Visible and palpable but>4cm
Dyspnoea	Absent	Rarely	Only on lying	Many time even in sitting
Change in voice	No change	Slight change Voice	Difficulty in phonation	Unable to phonation

**Statistical Analysis**

The results were assessed in term of p value statistically

- Highly significant p<0.001
- Moderately significant 0.01<p>0.001
- Significant p<0.05
- Insignificant p>0.05

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

Completely relieved (100% relief)
Marked improvement (75 to 99% relief)
Moderate improvement (50 to 74% relief)
Slight improvement (>25% to < 50% relief)
No improvement (0% relief)

**Objective Criteria**

a) Haematological Examination

➤ Hb%

➤ T.L.C.

➤ D.L.C.

➤ E.S.R.

➤ B. Sugar (Fasting)

b) X-rays extended neck lateral views (if required)

The effect of therapy in Group-I on criteria assessed has been presented here as under

Table No.-4.

Signs and Symptoms	N	Mean		X (d) BT-AT	% age relief	SD±	SE±	't'	P
		BT	AT						
Sore throat	10	2.000	0.600	1.400	75.00	0.699	0.221	6.332	<0.001
Size of tonsils enlargement	10	1.400	0.800	0.600	47.14	0.516	0.63	3.674	0.005
Congestion over tonsils and pillars	10	2.100	0.900	1.200	57.14	0.422	0.133	9.000	<0.001
Dysphagia	9	1.889	0.333	1.556	82.37	0.527	0.176	8.854	<0.001
Odynophagia	9	1.444	0.333	1.111	76.93	0.333	0.111	10.000	<0.001
Debris over tonsils and crypts	7	1.286	0.286	1.000	77.76	0.000	0.000	(+inf)	<0.001
Halitosis	7	1.286	0.714	0.571	44.40	0.535	0.202	2.828	0.030
Snoring	3	1.333	0.667	0.667	50.03	1.155	0.667	1.00	0.423
Follicles over tonsils	6	1.333	0.333	1.000	75.04	0.000	0.000	(+inf)	<0.001
J.D. Lymphadenopathy	6	1.333	0.833	0.500	37.50	0.548	0.224	2.236	0.076
Change in voice	5	1.880	0.880	1.000	53.19	0.000	0.000	(+inf)	<0.001
Cough	4	1.750	1.000	0.750	42.85	0.500	0.250	3.000	0.058
Dyspnoea	3	1.000	0.000	1.000	100	0.000	0.000	(+inf)	<0.001
Earache	2	1.000	0.000	1.000	100	0.000	0.000	(+inf)	<0.001
Fever	2	1.000	0.000	1.000	100	0.000	0.000	(+inf)	<0.001

The effect of therapy in Group-II on criteria assessed has been presented here as under

Table No.-5.

Signs and Symptoms	N	Mean		X (d) BT-AT	% age relief	SD±	SE±	't'	P
		BT	AT						
Sore throat	10	1.700	0.400	1.300	76.47	0.830	0.153	8.510	<0.001
Size of tonsils enlargement	10	1.300	0.800	0.500	38.46	0.527	0.167	3.000	0.015
Congestion over tonsils and pillars	10	2.100	1.000	1.100	52.38	0.316	0.100	11.000	<0.001
Dysphagia	8	1.500	0.375	1.125	75.0	0.641	0.227	4.965	0.002
Follicles over Tonsils	6	1.167	0.500	0.667	39.94	0.816	0.333	2.000	0.102
Odynophagia	10	1.300	0.400	0.900	69.23	0.316	0.100	9.000	<0.001
Halitosis	4	1.500	0.500	1.000	66.66	0.000	0.000	(+inf)	<0.001
Snoring	3	1.667	1.333	0.333	19.97	0.577	0.333	1.000	0.423
Debris over tonsils and crypts	5	1.200	0.600	0.600	60.00	0.548	0.245	2.449	0.070
Change in voice	4	1.250	0.250	1.000	80.00	0.000	0.000	(+inf)	<0.001
Cough	3	1.667	1.000	0.667	40.01	0.577	0.333	2.000	0.184
Dyspnoea	4	1.000	0.500	0.500	66.70	0.577	0.289	1.732	0.182
J.D. Lymphadenopathy	3	1.333	1.000	0.333	24.98	0.577	0.333	1.000	0.423
Earache	2	1.500	0.500	1.000	42.85	0.000	0.000	(+inf)	<0.001
Fever	2	1.500	0.500	1.000	66.66	0.000	0.000	(+inf)	<0.001

Table No. 6: Showing Inter group comparison of effect on parameters in Group I and Group II patients by Mann-Whitney Intergroup Test.

S. No.	Parameters	Mean of Diff		S.D	S.E	U Value	P Value	Result
		BT	AT					
1	Sore throat	1.50	1.30	0.53	0.17	40	0.9661	NS
2	Odynophagia	1.00	0.90	0.47	0.15	45	0.6264	NS
3	Dysphagia	1.40	1.00	0.70	0.22	34	0.1987	NS
4	Size of tonsils enlargement	0.60	0.50	0.52	0.16	45	0.69	NS
5	Congestion over tonsils and pillars	1.20	1.10	0.42	0.13	45	0.58	NS
6	Follicles over tonsils	0.60	0.40	0.52	0.16	38	0.3223	NS
7	Fever	0.20	0.20	0.42	0.13	50	0.9565	NS
8	Halitosis	0.40	0.40	0.52	0.16	50	0.9645	NS
9	Snoring	0.20	0.10	0.63	0.20	49	>0.9999	NS

10	Cough	0.30	0.20	0.48	0.15	45	0.6506	NS
11	Earache	0.20	0.20	0.42	0.13	50	0.9565	NS
12	Jugulodigastric lymphadenopathy	0.30	0.10	0.48	0.15	40	0.3006	NS
13	Change in voice	0.50	0.40	0.53	0.17	45	0.6934	NS
14	Debris over tonsils crypts	0.70	0.30	0.48	0.15	30	0.0892	NS
15	Dyspnoea	0.30	0.20	0.48	0.15	45	0.0.6506	NS

**Table No. 7: Overall effect of therapy in both groups, through Grade Score system in term of percentage.**

Results	Gr-I		Gr-II	
	No. of patients	%age	No. of patients	%age
Completely relieved (100% relief)	0	0	0	0
Marked improvement (75 to 99% relief)	2	20	2	20
Moderate improvement (50 to 74% relief)	8	80	6	60
Slight improvement (>25% to < 50% relief)	0	0	2	20
No improvement (0% relief)	0	0	0	0

#### Effect of azithromycin in 10 patients under trial group 1

Dyspnoea, Earache and fever were relieved by 100% which is highly significant statistically ( $p < 0.001$ ,  $t = +\infty$ ), Dysphagia 82.37% highly significant statistically ( $p < 0.001$ ,  $t = 8.854$ ), debris over tonsils and crypts 77.76% highly significant statistically ( $p < 0.001$ ,  $t = +\infty$ ), odynophagia 76.93% highly significant statistically ( $p < 0.001$ ,  $t = 10$ ), follicles over tonsils 75.04% highly significant statistically ( $p < 0.001$ ,  $t = +\infty$ ), sore throat 70.00% highly significant statistically ( $p < 0.001$ ,  $t = 6.33$ ), congestion over tonsils and pillars 57.14% highly significant statistically ( $p < 0.001$ ,  $t = 9.00$ ), change in voice 53.19% highly significant statistically ( $p < 0.001$ ,  $t = +\infty$ ), size of tonsils enlargement 47.14% moderately significant statistically ( $0.01 < p < 0.001$ ,  $t = 3.674$ ), Halitosis 44.40% significant statistically ( $p < 0.05$ ,  $t = 2.828$ ), cough 42.85 insignificant statistically ( $p > 0.05$ ,  $t = 3.00$ ), jugulodigastric lymphadenopathy 37.50% insignificant statistically ( $p > 0.05$ ,  $t = 2.24$ ).

#### Effect of Pippalyadi churna and Darvyadi Kwatha in 10 patients under trial group II

Change in voice were relieved by 80% which is highly significant statistically ( $p < 0.001$ ,  $t = +\infty$ ), sore throat 76.47% highly significant statistically ( $p < 0.001$ ,  $t = 8.51$ ), Dysphagia 75% moderately significant statistically ( $0.01 < p < 0.001$ ,  $t = 4.97$ ), odynophagia 69.23% highly significant statistically ( $p < 0.001$ ,  $t = 12.19$ ), dyspnoea 66.70% insignificant statically ( $p > 0.05$ ,  $t = 1.73$ ), fever 66.66% highly significant statistically ( $p < 0.001$ ,  $t = +\infty$ ).

Halitosis was relieved by 66.66% which is highly significant statistically ( $p < 0.001$ ,  $t = +\infty$ ), debris over tonsils and crypts 60.00% insignificant statistically ( $p > 0.05$ ,  $t = 2.45$ ), congestion over tonsils and pillars 52.38% highly significant statistically ( $p < 0.001$ ,  $t = 11.00$ ), Earache 42.85% highly significant ( $p < 0.001$ ,  $t = +\infty$ ), cough 40.01 insignificant statistically ( $p > 0.05$ ,  $t = 2.00$ ), follicles over tonsils 39.94% insignificant statistically ( $p > 0.05$ ,  $t = 2.00$ ), size of tonsils enlargement 38.46% significant statistically ( $p < 0.05$ ,  $t = 3.00$ ),

jugulodigastric lymphadenopathy 24.98% insignificant statistically ( $p > 0.05$ ,  $t = 1.00$ ).

#### Probable mode of action

The disease *Tundikeri* (Tonsillitis) as described in *Ayurvedic* text is *Kapha* and *Rakta* predominant in which there is presence of edema, enlargement of tonsils, pricking pain, burning sensation and suppuration. Therefore the present study, trial drugs viz. *Pippalyadi Churna* (*Ch-chi- 26/188*) and *Darvyadi Kwatha* (*C. Kantha Chi. Prakaran 13/13*) were selected with their valid classical reference. Ingredients of *Pippalyadi Churna* and *Darvyadi 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 *Kapha-Raktahara Doshkarma*. *Pippalyadi Churna* is having 40.90% of *Kaphahara* and 27.27% of *Pittahara Dravyas* whereas *Darvyadi kwatha* is containing 50% of *Kaphahara* and 50% of *Pittahara Dravyas*.

Major ingredient of *Pippalyadi Churna* i.e. *Daruharidra* used in crude form and *Rasanjan*, extract form *Daruharidra*; having properties like astringent, antibacterial, antipyretic and antiseptic. Alkaloid berberin obtained from *Daruharidra* possesses antibacterial and anti-inflammatory activities.

Similar manner *Yavakshaara* possesses antipyretic, wound purifying and healing properties; *Pippali* with its main component *piperine* alkaloid possesses antimicrobial, antipyretic, analgesic, digestant, antitussive and immunomodulatory activities. *Patha* possesses astringent, antipyretic, antiseptic and anti-inflammatory properties. *Agru* is antibacterial, antipyretic, anti-inflammatory, analgesic, antiseptic, antitussive and digestant. *Twaka* is anti-inflammatory, analgesic, digestant and antitussive. *Tejbala* is antipyretic, analgesic, digestant and antitussive. *Haritaki* is antibacterial, antipyretic, anti-inflammatory, digestant and antitussive properties.

*Darvyadi Kwatha* drug proven to have properties like astringent, antiseptic, anti-inflammatory, immunomodulatory, antioxidant, antibacterial, antimicrobial and wound purifying and healing by clinical studies mentioned in classical literature.

Major phytochemical of *Darvyadi Kwatha* is also alkaloid *berberin* obtained from *Daruharidra* and *Rasanjana* (extract from *Daruharidra*) which play a synergic action with *Pippalyadi churna*.

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

In classical terms, it can be interpreted that *Katu, Tikta, Kashaya Rasa, Laghu, Ruksha, Teekshna Guna, Ushna Veerya, Katu Vipaka* and *Kapha-pittaghna* 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*.

**Pippali**<sup>[14]</sup> - *Jvarghna, Vedanahara, Aampachana, Kasaghna, Rasayana.*

**Agru**<sup>[15]</sup>- *Vishghna, Jvaraghna, Shothhara, Vedanahara, Aampachana, Shodhana, Kashaghna.*

**Daruharidra**<sup>[16]</sup>- *Vishghna, Shothahara, Vedanahara, Shodana, Kasaghna, Dahaghna, Raktaprasadana.*

**Twaka**<sup>[17]</sup>- *Shothhara, Vednahara, Aampachana, Kashaghna.*

**Yavakshar-** *Vishghna, Shothahara, Vedanahara, Aampachana, Shodhana, Kasaghna, Rasayana.*

**Rasaun**<sup>[18]</sup>- *Vishghna, Shodhana, Kasaghna, Dahaghna, Raktaprasadana, Rasayana*

**Path-** *Jvaraghna, Vedanahara, Shodhana.*

**Tejbal**<sup>[19]</sup>- *Jvarghna, Vedanahara, Aampachana, Kasaghna.*

**Haritaki**<sup>[20]</sup>- *Vishghna, Jvarhara, Shothhara, Aampachana, Kashaghna.*

**Nimba**<sup>[21]</sup>- *Vishghna, Jvarhara, Shothhara, Aampachana, Shodhana, Kashaghna, Dahaghna, Raktaprasadana.*

**Indrayava-** *Vishghna, Jvarhara, Shothhara, Vednahara, Aampachana, Shodhana, Kashaghna, Dahaghna, Raktaprasadana.*

**Madhu**<sup>[22]</sup>- *Vishghna, Shodhana, Kasaghna.*

#### Action of drug ingredients on various sign/symptoms of *Tundikeri*:-

Table No.8

Sr.no.	<i>Doshagnata</i>	Drug ingredients	Decreases signs/Symptoms
1.	<i>Jvaraghna</i>	<i>Pippali, Agru, Patha, Tejbal, Haritaki, Nimba, Indrayava</i>	Fever
2.	<i>Vednahara</i>	<i>Pippali, Agru, Daruharidra, Twaka, Yavakhara, Patha, Tejbal, Indrayava</i>	Sore throat Dysphagia Odynophagia Earache
3.	<i>Shothahara</i>	<i>Agru, Daruharidra, Twaka, Yavakhara, Haritaki, Nimba, Indrayava</i>	Size of tonsils enlargement, Congestion in tonsils and pillars
4.	<i>Aampachana</i>	<i>Pippali, Haritaki, Agru, Nimba, Twaka, Yavakhara, Tejbal, Indrayava</i>	Size of tonsils enlargement Follicles over tonsils Debris over tonsils crypts Halitosis
5.	<i>Kashaghna</i>	<i>Pippali, Madhu, Agru, Daruharidra, Yavakhara, Rasaun, Tejbal, Haritaki, Nimba, Indrayava</i>	Cough
6.	<i>Rasayana</i>	<i>Pippali, Yavakhara, Rasaun</i>	Weakness
7.	<i>Vishaghna</i>	<i>Agru, Yavakhara, Rasaun, Haritaki, Indrayava, Madhu</i>	Fever with chills and rigor
8.	<i>Shothahara</i>	<i>Agru, Daruharidra, Twaka, Yavakhara, Haritaki, Nimba, Indrayava</i>	Size of tonsils enlargement, Congestion in tonsils and pillars
9.	<i>Shodhana</i>	<i>Agru, Rasaun, Patha, Indrayava, Nimba, Madhu</i>	Follicles over tonsils Debris over tonsils crypts

**SUMMARY**

- ❖ Maximum No. of patients were of age group 5-15 years (30%), were males and female 50-50%, unmarried 55%, Hindu 100%, resident of rural area 85%, student 55%, education up to matric 45%, belonged to middle class 55%, and vegetarian 25%.
- ❖ Majority of the patients had *Pitta-kaphaja Prakriti* 65% with *Madhyama Satva* 55%, *Avara Sara* 45%, *Madhyama Samhanana* 75% and *Mandagni* 75%.

- ❖ In majority of the patients were having no addiction 85%.
- ❖ Majority of patient's sweets was aggravating factors 25%.
- ❖ Majority of patients were having chronic parenchymatous 40%. 100% patients had enlarged tonsils, Sore throat and congestion over tonsils and pillars.

**Effect of Therapy on Individual Criterias in Both the Groups of Clinical Study****Table No.-1.**

S.N.	Parameters	Group-I (Standard Group)		Group II(Trial group)	
		% Relief	Remarks	% Relief	Remarks
1.	Sore throat	75.00	H.S.	76.47	H.S.
2.	Size of tonsils enlargement	47.14	M.S.	38.46	S.
3.	Congestion in tonsils and pillars	57.14	H.S.	52.38	H.S.
4.	Dysphagia	82.37	H.S.	75.00	M.S.
5.	Odynophagia	76.93	H.S.	69.23	H.S.
6.	Debris over tonsils and crypts	40.74	H.S.	60.00	I.S.
7.	Halitosis	44.40	S.	66.66	H.S.
8.	Snoring	50.03	I.S.	19.97	I.S.
9.	Follicles over tonsils	75.04	H.S.	39.94	I.S.
10.	J.D. Lymphadenopathy	37.50	I.S.	24.98	I.S.
11.	Change in voice	53.19	H.S.	80.00	H.S.
12.	Cough	42.85	I.S.	40.01	I.S.
13.	Dyspnoea	100	H.S.	66.70	I.S.
14.	Earache	100	H.S.	42.85	H.S.
15.	Fever	100	H.S.	66.66	H.S.

H.S.- Highly significant, S.- Significant, I.S.- Insignificant, M.S.- Moderately significant.

**Inter Group Comparison**

In comparative study over criteria's of assessment no statistically significant difference was observed between two therapies. The results of both the groups were highly significant in symptoms of sore throat, Congestion in tonsils and pillars, Odynophagia, Change in voice, Earache and Fever. Moderately significant in size of tonsils enlargement in group I and dysphagia in group II. Significant in halitosis in group I and size of tonsils enlargement in group II.

The results of both group were insignificant in symptoms of snoring, jugulodigastric lymphadenopathy and cough.

**Total Effect of Therapies**

- ❖ **In group I:** No any trial patients were observed completely relieved. Marked improvement was in 20%, moderate improvement was observed in 80%, slight improvement and no improvement were not observed in any patients.
- ❖ **In group II:** Marked improvements were observed in 20%, moderate improvement in 60% and slight improvement in 20%. No improvement and completely relieved was not observed.

**Probable mode of action of drugs**

- ❖ The disease *Tundikeri* as described in *Ayurvedic* texts are *Kapha* and *Rakta* dominating, therefore the

present trial drug viz. *Pippalyadi Churna* and *Darvyadi Kwatha* are chosen. They are having *Kapha-Rakthara Doshkarma*. *Pippalyadi churna* is containing 40.90% of *Kaphahara* and 27.27% of *Pittahara Dravyas* where as *Darvyadi kwatha* is containing 50% of *Kaphahara* and 50% of *Pittahara Dravyas*.

- ❖ Furthermore the drugs in the formulatin are also having *Deepana, Pachana, Vishahara, Jvarhara, Shothara, Dahahara, Vednahara, Shodhana, Aamnashaka, Kasahara, Raktaprasadana and Rasayana* properties by which the drugs acted in this particular disease

**CONCLUSION**

In the present research work on the basis of facts, observation, result of drug and clinical studies, the following can be concluded:

1. *Pippalyadi Churna* combined with *Darvyadi Kwatha* is very effective in *Tundikeri*.
2. The drugs diminish the various sign/symptoms of tonsillitis like sore throat, dysphagia, odynophagia and congestion over tonsils and pillars.
3. Excellent result was observed in group II to decreases the symptoms of sore throat, halitos and change in voice as compare to group I (slandered group).

4. The results was not satisfactory in group II to decreasing the sign/ symptoms of size of tonsils enlargement, follicles over tonsils, snoring, cough and jugulodigastric lymphadenopathy but this may be due to very short duration of therapy.
5. During the trial there was no any adverse effect of drug is found.

#### Scope for further research

- Although the present trial, being a pilot study gave satisfactory results but to prove the efficacy
- A large number of patients with longer trial duration are needed.
- Drug analysis and swab culture study could be the further step.

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