



## Research Article

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### ROLE OF SHATI COMPOUND IN THE MANAGEMENT OF VATAJA KASA IN CHILDREN

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#### ABSTRACT

Kasa is one of the commonest complaints in day to day pediatric practice and it is also a symptom of various diseases of respiratory system. Recurrent attacks makes the school going child suffer and may have its adverse effects on the studies of the child. The present clinical study was carried out to evaluate the effect of syrup Shati compound in Vataja kasa in children. The clinical trial was conducted on 73 patients in between the age group of 2 to 10 years. They were divided into two groups; each group consisted of minimum 30 patients. Group A and Group B were given syrup Shati compound and placebo concentrated sugar solution respectively. The results were analysed statistically. The analysis suggested that the syrup Shati compound is effective and safe herbal formulation in reducing the signs and symptoms of Vataja kasa.

**Keywords:** Kasa, Cough, Shati, Badara.

#### INTRODUCTION

As a known fact Uchhwasa and Nishwasa or to say breathing in and breathing out, is the normal phenomenon of life. To and fro movement of air through the Pranavaha srotas is the vital sign of life, the normalcy of which suggests health. The abnormality in respiration indicates disease and its cessation marks death. This unique sign of life is affected in the disease Kasa. Kasa is one of the commonest complaints in day to day pediatric practice and it is also a symptom of various diseases of respiratory system. Kasa may not be life threatening but increasingly annoying and irritating to individuals in their routine activities. Moreover when neglected it may lead to a series of complications. Kasa has a broad spectrum of etiology, ranging from allergens to infections. Recurrent attacks makes the school going child suffer and may have its adverse effects on the studies of the child. Cough occurs in association with acute upper respiratory infection, acute pharyngitis, acute bronchitis and chronic sinusitis, all of which rank among the top 10 reasons for visiting family physicians.

Shamana line of treatment that includes oral administration of medicine is of utmost importance as the administration is very easy and also effective compared to Shodhana in children. Many research works have been carried out in relation to the Shamana treatment as directed in Ayurveda and their therapeutic effects are proved. Many herbal combinations are described in Ayurveda and their therapeutic effect in Kasa is yet to be explored. The effect of syrup of an indigenous drug compound containing equal quantities of Shati<sup>1</sup> and stem bark of Badara<sup>2</sup> is likely to be very effective in combating the signs and symptoms of Vataja Kasa<sup>3-5</sup>.

A Clinical Study on Kasa with an Indigenous drug Compound<sup>6</sup> was also reported.

#### MATERIALS AND METHODS

Present study was being carried out for scientific understanding of a folklore claim of this trial drugs like Shati and Badara Twak in the management of Vataja Kasa. The present study was conducted on children of Vataja Kasa in between the age group of 2 to 10 years. Patients were divided into two groups. Group A and B were treated with syrup Shati compound which contains combination of Shati and Badara Twak and syrup sugar solution respectively which were prepared at SDP Ayurveda Pharmacy Puttur, D.K., India. The observations of the cases were recorded according to the research proforma.

#### Criteria for selection of patients

Patients with signs and symptoms of Vataja Kasa were selected randomly irrespective of their sex, religion etc. from Kaumarabhritya O.P.D of S.D.M. Ayurvedic Hospital, Hassan, India. Institutional Ethical Clearance Number: SDM/ IEC/09/2008-2009 was granted for this study.

#### Inclusion Criteria

- Patients presenting with Vataja Kasa.
- Any of two or more symptoms described in the context of Vataja Kasa.
- Patients of Vataja Kasa with chronicity of less than 15 days duration.
- Patients irrespective of sex, religion, socioeconomic status and between the age group of 2-10 years were taken.

#### Exclusion Criteria

- Other than Vataja Kasa
- Kasa as anubhandha lakshana in other systemic diseases.

**Study Design**

For diagnostic purpose the signs and symptoms mentioned below were taken for the study.

- Shushka Kasa
- Shirashoola
- Swarabheda
- Parshwa Shoola
- Ura Shoola
- Shushka vaktra
- Kantodhvamsanam

**Dose, duration and mode of administration**

- Duration of the treatment -10 days
- Dosage internally – syrup Shati compound 5 ml for 5-10 years of age group and 2.5 ml for 2 – 5 years of age group in QID that is 6<sup>th</sup> hourly after food.
- Placebo - syrup sugar solution 5 ml for 5-10 years age group and 2.5 ml for 2 – 5 years of age group in QID that is 6<sup>th</sup> hourly after food.

**Criteria for Assessment**

Children suffering from Vataja Kasa were assessed and evaluated on the basis of following parameters.

- KasaVega
- Duration of each bout
- Anidra

- Throat congestion
- AEC

**Statistical Analysis**

Statistical analysis was carried out using the software SPSS 17.0. We performed frequency calculations along with parametric and non-parametric test procedures. Differences of paired samples e.g. comparison between beginning and end of a treatment were tested with Dependent t test with regard to significance. Differences of independent samples were tested via the Independent sample t test.

**RESULTS AND DISCUSSION**

Syrup Shati compound helps in reducing Shirashoola, Parshwa Shoola and Ura Shoola due to Ushna Veerya of the drug Shati which acts as Vedana shapaka.

Kasa vega, Shushka kasa, Shushka vaktra and Swara bheda are due to Rooksha Guna of Vata and the Snigdha guna of Badara might provide better relief in those symptoms.

The pungent principles of Shati in syrup Shati compound acts as a potent anti-tussive<sup>7</sup> probably by blocking the vagal sensory afferents by counter irritant and local anaesthetic mechanism.

**Table 1: Registration data**

Groups	No. of patients		
	Total Registered	Drop out	Completed
Group A: syrup Shati compound	31	1	30
Group B: syrup Sugar solution	42	12	30
Total	73	13	60

**Table 2: Effect on symptoms, signs and hematological parameters of Vataja Kasa in Group A**

Features	N	BT	AT	% of relief	SE	T	P
Shushka Kasa	30	2.00	0.23	88.89	0.08	22.49	<0.001
Shirashoola	28	1.00	0	100	0.07	14.75	<0.01
Swarabheda	29	1.53	0.20	90.23	0.13	10.27	<0.001
Parshwa Shoola	28	1.0	0	100	0.07	14.75	<0.001
Ura Shoola	29	1.00	0	100	0.05	20.86	<0.001
Shushka vaktra	29	1.43	0.23	89.66	0.15	8.16	<0.001
Kantodhvamsanam	29	1.17	0.07	98.85	0.10	11.0	<0.001
KasaVega	30	2.07	0.23	90.56	0.07	26.49	<0.001
Duration of each bout	30	2.10	0.23	91.11	0.06	29.57	<0.001
Anidra	28	1.17	0.03	100	0.11	9.87	<0.001
Rhonchi	13	0.53	0	100	0.12	4.29	<0.01
Throat congestion	29	0.97	0	100	0.03	29	<0.001
Total WBC	30	8889.2	8787.6	1.10 ↓	22.23	4.57	<0.001
Neutrophil (%)	30	66.93	65	2.78 ↓	0.46	4.18	<0.01
Lymphocyte (%)	30	26.2	31.07	21.45 ↑	1.52	3.2	<0.01
Eosinophil (%)	30	6.57	5.3	17.42 ↓	0.19	6.62	<0.001
Monocyte (%)	9	0.3	0.07	88.89 ↓	0.09	2.54	<0.05
AEC	30	531.13	459.6	12.63 ↓	10.26	6.98	<0.001
ESR (mm/1 <sup>st</sup> hr)	30	8.83	5.67	35.76 ↓	0.29	10.85	<0.001
Hb (gm %)	30	13.84	14.03	1.42 ↑	0.04	4.97	<0.001

Note: ↓decrease, ↑increase

N- Number of Frequency, BT- Before Treatment, AT- After Treatment, SE- Standard Error  
T- Value got after applying T Test and P- Probability.

**Table 3: Effect on symptoms, signs and hematological parameters of Vataja Kasa in Group B**

Features	N	BT	AT	% of relief	SE	T	P
Shushka Kasa	30	2.00	1.53	23.33	0.09	5.04	<0.001
Shirashoola	19	0.70	0.20	89.47	0.12	4.01	<0.01
Swarabheda	30	1.73	1.43	13.33	0.10	3.07	<0.01
Parshwa Shoola	23	0.83	0.77	17.39	0.10	0.70	>0.05
Ura Shoola	23	0.80	0.97	2.17 ↑	0.08	1.98	>0.05
Shushka vaktra	30	1.67	1.30	16.67	0.10	3.61	<0.01
Kantodhvamsanam	30	1.53	1.10	19.44	0.10	4.18	<0.01
Kasa Vega (Bouts of cough)	30	2.20	1.63	25	0.09	6.16	<0.001
Duration of each bout	30	2.17	1.57	24.72	0.09	6.60	<0.001
Anidra	27	1.27	0.97	25.93	0.12	2.52	<0.05
Rhonchi	11	0.53	0.30	50	0.09	2.54	<0.05
Throat congestion	27	0.93	1.0	7.14↑	0.05	1.44	>0.05
Total WBC	30	8938.9	8946.77	0.12↑	9.38	0.84	>0.05
Neutrophil (%)	30	67.93	68.6	1.14↑	0.48	1.40	>0.05
Lymphocyte (%)	30	25.53	25.10	0.46↓	0.53	0.82	>0.05
Eosinophil (%)	30	6.37	6.40	0.83↑	0.06	0.57	>0.05
Monocyte (%)	5	0.17	0	100	0.07	2.41	<0.05
AEC	30	549.10	550.87	0.75 ↑	2.90	0.61	>0.05
ESR (mm/1 <sup>st</sup> hr)	30	8.93	9.07	6.11↑	0.29	0.45	>0.05
Hb (gm %)	30	12.83	12.62	1.63↓	0.04	4.75	<0.001

Note: ↓decrease, ↑increase

N- Number of Frequency, BT- Before Treatment, AT- After Treatment, SE- Standard Error, T- Value got after applying T Test and P- Probability.

**Table 4: Comparative effect on symptoms, signs and hematological parameters of Vataja Kasa in Group A and Group B**

Measures	Group A		Group B		T	p value
	N	% Relief	N	% Relief		
Shushka Kasa	30	88.89	30	23.33	10.97	< 0.001
Shirashoola	28	100	19	89.47	2.09	< 0.05
Swarabheda	29	90.23	30	13.33	10.45	< 0.001
Parshwa Shoola	28	100.00	23	17.39	12.27	< 0.001
Ura Shoola	29	100.00	23	2.17 ↑	50.66	< 0.001
Shushka vaktra	29	89.66	30	16.67	9.60	< 0.001
Kantodhvamsanam	29	98.85	30	19.44	12.61	< 0.001
Kasa Vega (Bouts of cough)	30	90.56	30	25.0	12.31	< 0.001
Duration of each bout	30	91.11	30	24.72	13.24	< 0.001
Anidra	28	100.00	27	25.93	12.20	<0.001
Rhonchi	13	100	11	50	4.67	< 0.001
Throat congestion	29	100.00	27	7.14	4.61	<0.001
Total WBC	30	1.10	30	0.12	4.60	< 0.001
Neutrophil (%)	30	2.78	30	1.14	3.97	< 0.001
Lymphocyte (%)	30	21.45	30	0.46	3.08	< 0.01
Eosinophil (%)	30	17.42	30	0.83	7.28	< 0.001
Monocyte (%)	9	88.89	5	100	0.73	N.S
AEC	30	12.63	30	0.75	6.71	< 0.001
ESR (mm/1 <sup>st</sup> hr)	30	35.76	30	6.11	7.39	< 0.001
Hb (gm %)	30	1.42↑	30	1.63↓	6.90	< 0.001

Note: ↓decrease, ↑increase and N.S not significant

N- Number of Frequency, T- Value got after applying T Test and P- Probability.

Kashaya Rasa of Badara twak in syrup Shati compound does the mucosal modulation which cuts off the contact of antigen and receptors such as Dendritic Cells, MHCs those are embedded in the mucosa of nose, pharynx, larynx etc. This drug action explains the symptomatic relief from Kasa.

The marked decrease in ESR and simultaneous decrease in (Absolute Eosinophil Count) AEC clearly indicates the drug's action on allergic conditions. Decrease in Total

counts and polymorphs indicate the drug's effectiveness even in infectious conditions.

In modern perspective the drugs with pungent taste and hot potency such as Shati act as local counter irritants and block the efferent fibers of vagus which carry the cough stimuli to the cough center<sup>8,9</sup>. In addition to this, drug also acts as Mucolytic.

Stem bark of Badara with abundant tannins, exhibit surface action on the pharyngolaryngeal mucosa and

modulate them to decrease exudation<sup>10</sup> and provide a shield against the contact of any antigen, in addition tannins also have local antimicrobial action which destroy the microbes coming in contact.

### CONCLUSION

Kasa being the common childhood ailment has been given more emphasis by the medical fraternity, because it diverts parents psyche from their routine work. On clinical symptoms of Vataja Kasa, syrup Shati compound provided relief in all the cardinal and associated symptoms of Vataja Kasa. All the changes were statistically highly significant. The syrup Shati compound also showed statistically highly significant relief in duration of each bout, frequency of bouts, throat congestion, AEC and also show improvement in Hb gram %. The findings suggest that syrup Shati compound is an effective and safe herbal formulation for the Vataja Kasa.

### Abbreviation

WBC –White Blood Cell count

Hb –Hemoglobin

ESR –Erythrocyte Sedimentation Rate

AEC –Absolute Eosinophil Count

N.S - Not significant

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