

A COMPARATIVE STUDY ON GUDUCHI VATI AND MANDOOKAPARNI VATI IN THE MANAGEMENT OF CHITTODVEGA (GENERALIZED ANXIETY DISORDER)

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ABSTRACT

Background - Anxiety disorder (*Chittodvega*) is having one-year prevalence rate 2.5-8% globally. *Chittodvega* is a disease of mind caused due to *Manasika dosha rajas* and *tamas* along with the *Sharirika doshas* mainly *vata pradhan*. *Mandookaparni* and *Guduchi* are mentioned as *Medhya* drug which is helpful for *Medha* or the intellect, *Dhi* (intelligence) or *Buddhi*, *Dhriti* (retention power) and *Smriti* (memory) and these drugs are having potential antistress properties and psychotropic actions. **Objectives**: To evaluate & compare the effect of *Guduchi Vati* and *Mandookaparni Vati* administered for 1 month in the management of *Chittodvega* (Generalized Anxiety Disorder). **Materials and Methods**: This is a comparative study involving two groups of 15 patients each. Patients in Group A & Group B received *Guduchi Vati* & *Mandookaparni Vati* in the dose of 500 mg tablet thrice daily with water after food for a month. Follow up was done for a period of one month in both the groups. **Results**: The percentage of relief obtained in groups A and B in anxious mood was 47.71% & 50% , in tension 47.71% & 44.55%, in fear 33.33% & 23.52%, in insomnia 36.06% & 42.10%, in intellectual symptoms 20.35% & 20.35%, in depressed mood 00.00% & 15.95%, in somatic muscular symptoms 00.00% & 26.58%, in somatic sensory symptoms 15.95% & 26.58%, in cardiovascular symptoms 39.57% & 36.06%, in autonomic symptoms 33.33% & 33.33% and behavior at interview 20.35% which was statistically significant $P < 0.05$ after 30 days of treatment. **Interpretation & Conclusion**: Based on the result obtained from the study, both *Guduchi Vati* and *Mandookaparni Vati* are effective in the management of generalized anxiety disorder. In comparison of both groups, there was no significant difference seen between the groups.

Keywords: *Guduchi*, *Tinospora cordifolia* Linn, *Mandookaparni*, *Centella asiatica*,

INTRODUCTION

Anxiety is the commonest among psychiatric symptoms in clinical practice and anxiety disorders are one of the commonest psychiatric disorders in general population.¹ Generalized Anxiety Disorder

(GAD) is one of the anxiety disorder characterized by mental worry and anxiety, that individual finds difficulty in controlling.² In today's fast growing society Anxiety Disorders are increasing day by day. Genera-

lized anxiety disorder is the most common health problem in the present world due to stress, life style, sedentary habits, excessive worry, fear etc. it not only affects the patient mentally but physically also. The World Health Organization (WHO) Global Burden of Disease Survey estimates that mental disease, including stress related disorders, will be the second leading cause of disability by the year 2020. The conceptual study showed that Generalized Anxiety Disorders (GAD) could be better studied in terms of *Chittodvega* in *Ayurveda*. *Chittodvega* is one of the *Manasika Vikara* mentioned in *Ayurvedic literature*³ in which mind is afflicted by anxiety, fear and agitation.⁴ A potentially beneficial use of herbal medicine involves the use of herbs as adaptogens in order to prevent stress-induced morbidity. *Mandookaparni* and *Guduchi* are mentioned as *Medhya Rasayana* in *Charaka Samhita*.⁵ The drug is called *Medhya* because it is especially beneficial for *Medha* or the intellect, which is the seat of *prajna*, consists of *Dhi* (intelligence) or *Buddhi*, *Dhriti* (retention power) and *Smriti* (memory). *Guduchi* and *Mandookaparni* are having various psychotropic actions. These drugs decrease the level of catecholamines in the body and possess Anti-anxiety, Anti-stress and Adaptogenic effect.⁶ hence, the present study was carried out to evaluate the efficacy of *Guduchi Vati* and *Mandookaparni Vati*. In this regard it was planned to compare the effectiveness of *Guduchi Vati* and *Mandookaparni Vati* in the management of *Chittodvega* (Generalized Anxiety Disorder).

MATERIALS AND METHODS

Objectives of the study: 1. To evaluate the efficacy of *Guduchi Vati* in the management

of *Chittodvega* (Generalized Anxiety Disorder).

2. To evaluate the efficacy of *Mandookaparni Vati* in the management of *Chittodvega* (Generalized Anxiety Disorder).

3. To compare the effect of *Guduchi Vati* and *Mandookaparni Vati* in the management of *Chittodvega* (Generalized Anxiety Disorder).

Source of data: For the present Clinical study, 33 patients fulfilling the diagnostic criteria of *Chittodvega* (GAD) were randomly selected from the OPD and IPD of Department of Manasa Roga, SDM College of Ayurveda & Hospital, Hassan, Karnataka, India.

Diagnostic criteria: The patients diagnosed as Mild form of Generalized Anxiety Disorder were subjected to detailed clinical history physical examination and mental status examination. The following criteria of ICD-10 were taken into consideration for the final diagnosis.⁷

Inclusion criteria:

1. Mild GAD for less than 5 years.
2. Mild GAD episode as per ICD-10.
3. Patient between age group of 20 to 50 years of age irrespective of gender.

Exclusion criteria

1. Patient suffering from other psychiatric illness like mood disorder, psychosis, epilepsy, phobic anxiety disorder.
2. GAD associated with other systemic disorder like uncontrolled diabetes, hypertension, hyperthyroidism, cardiac disorders.

Plan of Study: 33 patients fulfilling the inclusion criteria were randomly selected and assigned into the following 2 groups (A & B).

Group A: 17 patients were administered *Guduchi Vati* with dosage of 500 mg tablet

thrice a day with water after food for a period of one month.

Group B: 16 patients were administered *Mandookaparni Vati* with dosage of 500 mg tablet thrice a day with water after food for a period of one month.

ASSESSMENT CRITERIA

The result of the treatment was evaluated as to the degree of anxiety according to Hamilton Anxiety Rating Scale.⁸

HAMILTON ANXIETY RATING SCALE: All symptoms under Hamilton anxiety rating scale were statistically analyzed using Friedman test (Repeated measure analysis), Wilcoxon Test with Bonferroni correction (within the group) and Mann Whitney Test (between the groups).

OBSERVATIONS

The demographical data of 33 patients were studied in two groups. Group A was consisting of 17 patients among which 15 patients completed the study. While Group B was consisting of 16 patients amid which 15 patients completed the study. The age wise distribution of the patients showed that maximum numbers of patients 36.40% (n=12) were in the age group of 20- 30 years and 40-50 years (n=12) followed by 27.20% (n=9) patients in the age group of 30-40 years. The utmost number of patients 51.52% (n=17) were female and remaining 48.48% (n=16) were males. Highest number of patients were of Hindus 87.88% (n=29) while 12.12% (n=4) were Muslims. 75.76% (n=25) were married while 21.21% (n=7) were unmarried and 0.03% (n=1) were divorced. The maximum number of patients 36.36% (n=12) were graduates, whereas 27.28% (n=9) SSLC, 18.18% (n=6) PUC, 15.15% (n=5) were higher primary and 3.03% (n=1) were post graduates. The most

number of patients 36.36% (n=12) were business & Agriculturist, 33.33% (n=11) house wives, 15.15% (n=5) service class, 9.09% (n=3) were students and 6.06% (n=2) non-government employee. 63.60% (n=21) patients had *Avara Satva* whereas 36.40% (n=12) were of *Madhyama Satva*. The highest number of patients 63.60% (n=21) were having *vata pitta prakriti*, while 21.20% (n=7) were having *Pitta kapha prakriti* and the remaining 15.20% (n=5) were having *vata kapha prakriti*. 87.90% (n=29) patients were of *Rajasika prakriti*, remaining 12.10% (n=4) were of *Tamasika prakriti*. 84.80% of the patients were of anxious personality, while 15.20 % were of aggressive personality. Maximum number of patients 43.33% (n=13) were having chronicity upto 1 years (acute), whereas 36.77% (n=11) patients were having 1 to 3 years (sub acute) and the remaining 20% (n=6) patients were having 3-5 years (progressive). The Cardinal Symptom like anxiousness 100% (n=30), tension 100% (n=30), fear 69.99% (n=21), insomnia 83.33% (n=25), intellectual symptoms 73.33% (n=22), depressed mood 16.67% (n=5), somatic muscular symptoms 66.67% (n=20), somatic sensory symptoms 40% (n=12), cardiovascular symptoms 90% (n=27), respiratory symptoms 16.67% (n=5), gastrointestinal symptoms 23.33% (n=7), genitourinary symptoms 16.67% (n=5), autonomic symptoms 86.67% (n=26) and behavioral symptoms at interview 40% (n=12) shown in Table-1.

Effect of the Therapies on the Patients of Chittodvega

The effect of *Guduchi Vati* on signs and symptoms of 15 patients of *Chittodvega* after treatment is detailed in following symptoms like anxious mood 47.71%

($p < 0.001$), tension 47.71% ($p < 0.001$), fear 33.33% ($p < 0.05$), insomnia 36.06% ($p < 0.05$), intellectual function 20.35% ($p < 0.05$), somatic sensory symptoms 15.95% ($p < 0.05$), cardiovascular symptoms 39.57% ($p < 0.05$), autonomic symptoms 33.33% ($p < 0.05$), behavior at interview 20.35% ($p < 0.05$) which were statistically significant. *Guduchi Vati* showed 12.50% ($p > 0.05$) in somatic muscular symptoms, 12.50% ($p > 0.05$) in gastrointestinal symptoms, 8.91% ($p > 0.05$) in genitourinary symptoms which were not statistically significant after 30 days of treatment shown in table 2. The effect of *Mandookaparni Vati* on signs and symptoms of 15 patients of *Chittodvega* after treatment is detailed in following symptoms like anxious mood 50% ($P < 0.001$), tension 44.55% ($P < 0.001$), fear 23.52% ($P < 0.05$), insomnia 42.10% ($p < 0.05$), intellectual function 20.35% ($p < 0.05$), depressed mood 15.95% ($p < 0.05$), somatic muscular symptoms 26.58% ($p < 0.05$), somatic sensory symptoms 26.58% ($p < 0.05$), cardiovascular symptoms 36.06% ($p < 0.05$), autonomic symptoms 33.33% (< 0.05) which were statistically significant. *Mandookaparni Vati* showed 12.50% ($p > 0.05$) in respiratory symptoms, gastrointestinal symptoms 12.50% ($p > 0.05$), genitourinary symptoms 12.50% (> 0.05), behavior at interview 3.92% (> 0.05) which were not statistically significant after 30 days of treatment shown in table 3. Comparison of Effect of *Guduchi Vati* & *Mandookaparni Vati* on *Chittodvega* after treatment is detailed in comparison of both groups (Group A-*Guduchi Vati*, Group B-*Mandookaparni Vati*); the result between two groups was compared by Mann-Whitney Test the calculated value of the test

-0.232. The p value is 0.816. Since the p value anxious mood ($0.816 > 0.05$); tension ($1.000 > 0.05$); fear ($0.281 > 0.05$); insomnia ($0.717 > 0.05$); intellectual function ($0.055 > 0.05$); depressed mood ($0.317 > 0.05$); somatic muscular symptoms ($0.869 > 0.05$); somatic sensory symptoms ($0.550 > 0.05$); cardiovascular symptoms ($0.472 > 0.05$); respiratory symptoms ($0.472 > 0.05$); gastrointestinal symptoms ($0.317 > 0.05$); genitourinary symptoms ($1.000 > 0.05$); autonomic symptoms ($0.237 > 0.05$); behavior at interview ($0.240 > 0.05$) shown in table 4. It can be concluded that there was no significant difference in between the groups.

DISCUSSION

Discussion on the effect of clinical data before and after the treatment:

In present study it was observed that, in group A, patients administered with *Guduchi Vati* showed 47.71% (< 0.001) reduction in the anxious mood, An ethanolic extract of the roots of *Tinospora cordifolia* normalized stress-induced biochemical changes in norepinephrine Anti-stress activity.^{9,10} 47.71% (< 0.001) relief in the tension as *Guduchi* has been claimed to possess anti-stress activity.^{11,12} Fear was experienced by 12 patients & 33.33% (< 0.05) reduction in the symptoms of fear. 36.06% (< 0.05) reduction in the symptom of insomnia, Patients experienced 20.35% (< 0.05) reduction in the symptoms of intellectual functions because *Tinospora cordifolia* has been claimed to possess learning and memory enhancing.^{13,14} Sensory symptoms were experienced by 4 patients & 15.95% (< 0.05) relief in the symptoms. Cardiovascular symptom was experienced by 14 patients & 39.57% (0.05) reduction in the symptoms. Research studies using alcoholic extract of *Tinospora cordifo-*

lia in ischemia-reperfusion induced myocardial infarction in rats suggested the cardio protective activity of *Tinospora cordifolia*.¹⁵ Patients experienced 33.33% (<0.05) reduction in the autonomic symptoms. Behavior symptoms were experienced by 8 patients & 20.35% (<0.05) reduction in the behavior symptoms which were statistically significant p value <0.05.

In present study it was observed that, in group B, Patients administered with *Mandookaparni Vati* showed 50% (<0.001) reduction in the anxious mood. The Pharmacological studies have also revealed that, *Centella asiatica* and its constituents, mainly asiaticoside and ursolic acid have wide range of pharmacological activities as Anxiolytic action.^{16,17} The component Asiaticoside is an active triterpene substance which has role in Anxiolytic activity as it increases GABA level in brain. 44.55% (<0.001) relief was found in the tension. *Centella asiatica* proved for its anti-stress effects.¹⁸ it may also have role in the reduction of fear and tension. Fear was experienced by 9 patients & 23.52% (<0.05) relief was found in the symptoms. The component Asiaticoside is an active triterpene substance which has role in Anxiolytic activity as it increases GABA level in brain.¹⁹ it may also have role in the reduction of fear. 42.10% (<0.001) relief was found in the symptoms of insomnia. The Pharmacological studies have revealed that *Centella asiatica* and its constituents, mainly asiaticoside and ursolic acid have wide range of pharmacological activities as Sedative action.^{20,21} 20.35% (<0.05) relief was found in the symptoms of intellectual function and the mechanism of action appears to be associated with a central nervous system-depressant activity of *Centella asi-*

tica, owing to an increase in the concentration of GABA in the brain. Fresh whole plant juice of *Mandookaparni* is used for therapeutic purposes as *Medhya* (cognitive enhancer).²² Depressed mood was experienced by 5 patients & 15.95% (<0.05) reduction in symptoms. Triterpense have been found to reduce the levels of corticosterone in serum and increase monoamines, thereby exerting an antidepressant effect.²³⁻⁴ Muscular symptoms were experienced by 12 patients & 26.58% (<0.05) relief was seen in the symptoms. Madecassoside component is responsible for controlling inflammation.²⁵ Sensory symptoms were experienced by 8 patients & 26.58% (<0.05) reduction in the symptoms. Cardiovascular symptoms were experienced by 13 patients & 36.06% (<0.05) reduction in the symptoms. The alcoholic extract of *Centella asiatica* whole plant was evaluated for cardio protective-activity against ischemia-reperfusion induced myocardial infarction in rats. Cardio protective activity was studied by measuring infarct size and estimating lipid peroxide levels in serum and heart tissue. Autonomic symptoms were experienced by 12 patients & 33.33% (<0.05) relief in the symptoms which were statistically significant p value < 0.05.

Comparison of effect of both therapies: In comparison of both groups, there was no significant difference in between the groups.

Discussion on the effect of clinical data between after the treatment and follow up: After stoppage of medicine when patients were followed for 1 month, the symptoms were maintained without further increase or decrease.

In the present study, the observation showed that, there was significant relief in

the sign and symptoms between before treatment & after 30 days of treatment, but there was no recurrence in any sign and symptoms between after treatment & follow up. Overall effect of *Guduchi Vati* and *Mandookaparni Vati* had no significant difference in between the groups.

Here, *Guduchi* and *Mandookaparni* are *Tikta*, *Kashaya pradhan Madhura dravyas*. *Guduchi* is of *Ushna virya* and *Madhura rasa* of *Mandookaparni* facilitate to reduce the vitiated *Vata dosha*. Similarly *Madhura Vipaka* of *Guduchi* and *Sheeta Virya* of *Mandookaparni* are responsible to reduce vitiated *Pitta dosha*. Therefore it was considered to be an effective treatment for *tridosahara*. In *Ayurveda*, it is emphasized that *chittodvega* results due to *Rajas* and *Tamas doshas* in the mind. These *doshas* are responsible for producing *Avarana* over the mind. The relief from the symptoms has been found to be statistically significant. These observations reveals that the drug might have counteracted or pacified *Raja* and *Tamo doshas*, so *Avarana* of mind was removed and the disease was subsided or controlled. Further pharmacological studies have proven that *Guduchi* and *Mandookaparni* have Anxiolytic, anti-stress, enhancing memory, antidepressant, tranquilizing and sedative activities. These observations clearly indicate that *Guduchi Vati* (*Tinospora cordifolia*) has potential antistress properties. The Antistress action has been shown to be beneficial in depression and improving cognition and memory. The most likely antidepressant mechanisms involve inhibiting reuptake of amines in the brain. Improved levels of norepinephrine (NE), serotonin (5-hydroxytryptamine or 5-HT), and dopamine (DA) and decreased levels of gamma-amino

butyric acid (GABA) have been demonstrated. Inhibiting the breakdown of amines, particularly norepinephrine and serotonin has also been demonstrated. GABA-B receptor antagonism and G-protein mediated signaling have been suggested as additional underlying mechanism. Central antioxidant and protective properties play an important role in improving cognition, concentration and memory. *Tinospora cordifolia* has also been shown too beneficial in improving cerebral ischemia. Prevention of oxidative stress injury and regulation of cytokines are possible mechanisms involved in this beneficial effects.²⁶

Mandookaparni Vati (*Centella Asiatica*) has potential action in the regulation of hypothalamo-pituitary-adrenocortical axis (HPA axis) especially, during stress related disorder. It appears that *Centella asiatica* may be a safer alternative to Benzodiazepines for the therapy of stress related clinical disorder.²⁷

CONCLUSION

This study showed that in Group A, 47.71% relief in anxious mood and tension, 33.33% relief in fear, and 36.06 % relief in insomnia, 20.35 % relief in intellectual symptoms, 15.95% relief in somatic sensory symptoms, 39.57 % relief in cardiovascular symptoms, 33.33% relief in autonomic symptoms, 20.35% relief in behavior at interview was observed which were statistically significant $P < 0.05$ after 30 days of treatment. Whereas in Group B, 50% relief in anxious mood, 44.55% relief in tension, 23.52% relief in fear, 42.10 % relief in insomnia, 20.35% relief in intellectual symptoms, 15.95 % relief in depressed mood, 26.58% relief in somatic muscular symptoms, 26.58% relief in somatic sensory

symptoms, 36.06% relief in cardiovascular symptoms, 33.33% relief in autonomic symptoms were seen, which was statistically significant $P < 0.05$ after 30 days of treatment. In comparison of both groups, there was no significant difference seen between the groups.

In this study, it was observed that there was reduction in clinical symptoms in

anxiety after using *Guduchi Vati* and *Mandookaparni Vati*. Based on the result obtained from the study, *Guduchi Vati* and *Mandookaparni Vati* provided mild effect in majority of symptoms in generalized anxiety disorder.

Table 1: Cardinal signs & symptoms complained by 30 Patients of Chittodvega

Cardinal Signs & Symptoms	No. of Patients		Total Patients	%
	Group A	Group B		
Anxious	15	15	30	100
Tension	15	15	30	100
Fears	12	9	21	69.99
Insomnia	12	13	25	83.33
Intellectual symptoms	12	10	22	73.33
Depressed mood	0	5	5	16.67
Somatic (muscular)	8	12	20	66.67
Somatic (Sensory)	4	8	12	40.00
Cardiovascular Symptoms	14	13	27	90.00
Respiratory Symptoms	2	3	5	16.67
Gastrointestinal Symptoms	3	4	7	23.33
Genitourinary Symptoms	2	3	5	16.67
Autonomic Symptoms	14	12	26	86.67
Behavior at interview	8	4	12	40.00

Table 2: showing the effect of Guduchi Vati on signs and symptoms of 15 patients of Chittodvega after treatment

Friedman Test					
	Mean Rank		X ²	P value	Remarks
	BT	AT			
Anxious mood	1.97	1.03	14.000	0.001	S
Tension	1.97	1.03	14.000	0.001	S
Fear	1.80	1.20	9.000	0.003	S

Insomnia	1.83	1.17	10.000	0.002	S
Intellectual Function	1.67	1.33	5.000	0.025	S
Depressed Mood	1.50	1.50	--	--	
Somatic Muscular Symptoms	1.60	1.40	3.000	0.083	NS
Somatic Sensory Symptoms	1.63	1.37	4.000	0.046	S
Cardiovascular Symptoms	1.87	1.13	9.308	0.002	S
Respiratory Symptoms	1.50	1.50	--	--	
Gastrointestinal Symptoms	1.60	1.40	3.000	0.083	NS
Genitourinary Symptoms	1.57	1.43	2.000	0.157	NS
Autonomic Symptoms	1.80	1.20	9.000	0.003	S
Behavior at Interview	1.67	1.33	5.000	0.025	S

Table 3: showing the effect of Mandookaparni Vati on signs and symptoms of 15 patients of Chittodvega after treatment

Friedman Test					
	Mean Rank		X ²	P value	Remarks
	BT	AT			
Anxious mood	2.00	1.00	15.000	0.001	S
Tension	1.93	1.07	13.000	0.001	S
Fear	1.70	1.30	4.500	0.034	S
Insomnia	1.90	1.10	12.000	0.001	S
Intellectual Function	1.67	1.33	5.000	0.025	S
Depressed Mood	1.63	1.37	4.000	0.046	S
Somatic Muscular Symptoms	1.73	1.27	7.000	0.008	S
Somatic Sensory Symptoms	1.73	1.27	7.000	0.008	S
Cardiovascular Symptoms	1.83	1.17	10.000	0.002	S
Respiratory Symptoms	1.60	1.40	3.000	0.083	NS
Gastrointestinal Symptoms	1.60	1.40	3.000	0.083	NS
Genitourinary Symptoms	1.60	1.40	3.000	0.083	NS
Autonomic Symptoms	1.80	1.20	9.000	0.003	S
Behavior at Interview	1.53	1.47	1.000	0.317	NS

Table 4: Comparison of Effect of Guduchi Vati & Mandookaparni Vati on Chittodvega after treatment

Parameter	Group A			Group B			Mann-Whitney U Test	Z Value	P Value	Remarks
	N	MR	SR	N	MR	SR				
Anxious mood	15	15.80	237.00	15	15.20	228.00	108.000	- 0.232	0.816	NS
Tension	15	15.50	232.50	15	15.50	232.50	112.500	0.000	1.000	NS

Fear	15	17.00	255.00	15	14.00	210.00	90.000	- 1.077	0.281	NS
Insomnia	15	16.00	240.00	15	15.00	225.00	105.00	0.362	0.717	NS
Intellectual	15	18.20	273.00	15	12.80	192.00	72.000	- 1.917	0.055	NS
Depressed mood	15	15.00	225.00	15	16.00	240.00	105.000	- 1.000	0.317	NS
Somatic Muscular	15	15.73	236.00	15	15.27	229.00	109.000	- 0.165	0.869	NS
Somatic sensory	15	15.00	225.00	15	16.00	240.00	105.000	- 0.598	0.550	NS
CVS	15	14.50	217.00	15	16.50	247.50	97.500	- 0.720	0.472	NS
RS	15	16.50	247.50	15	14.50	217.50	97.500	- 1.439	0.472	NS
GIT	15	15.00	225.00	15	16.00	240.00	105.000	- 1.000	0.317	NS
GUT	15	15.50	232.50	15	15.50	232.50	112.500	0.000	1.000	NS
Autonomic symptoms	15	17.10	256.50	15	13.90	208.50	88.500	- 1.182	0.237	NS
Behavior Interview	15	17.00	255.00	15	14.00	210.00	90.000	- 1.175	0.240	NS

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