

A CLINICAL STUDY ON THE EFFECT OF *MEDHYA RASAYANA* THERAPY ON ANXIETY AND DEPRESSION IN SENILE DEMENTIA

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ABSTRACT

Ageing population is growing faster than the total population especially in the Asian region in this new millennium. Ageing is associated with physiological, functional and pathological changes which are concerned with the loss of physical agility and mental acuity. Epidemiologic studies revealed that majority of older adult community are suffering from Anxiety and Depression symptoms. In Ayurveda, *Medhya Rasayana* therapy responds to the status of mental health and promotes the cognitive abilities. The study has been focused to find out the effect of *Medhya Rasayana* therapy on Anxiety and Depression among dementia individuals. *Guduchyadi Medhya Rasayana* is an authentic Ayurveda formula given three times per day in the form of granules for a period of three months to the 43 patients of senile dementia adopting purposive sampling method. Hamilton rating scales for Depression and Anxiety and Brief Psychiatric Rating Scale were used for the assessment. Observational results showed that *Guduchyadi Medhya Rasayana* has given relief on the symptoms of ratings scales statistically highly significant at the level of $P < 0.001$ and it has Anxiolytic, Anti depression, and Cognitive enhancing potentials. Therefore, *Guduchyadi Medhya Rasayana* is an effective therapy to overcome Depression and Anxiety in Senile Dementia.

Keywords: *Medhya Rasayana*, Depression, Anxiety, Senile Dementia

INTRODUCTION

Population ageing is the increase in the number and proportion of older people in the society. As a result of the rapid decline in mortality and fertility, there have been notable increases in the proportion of the population in the elderly age group in many countries in the world¹. With ageing of the population, much age related illnesses develop insidiously and gradually progress over the years. Some of those illnesses are Diabetes, High Blood Pressure, Heart Diseases, Stroke, Mental illnesses and Arthritis etc.

The most common cause of late life cognitive impairment and Alzheimer's disease is characterized neuropathologically by gradual accumulation of neuritic plaques and neuro fibrillary tangles in the brain. Clinically, a progression of cognitive decline is seen, which begins with mild memory loss and ends with severe cognitive and behavioral deterioration². Therefore, it is necessary to prevent neural damage than to repair it once it occurs and develop

strategies for early detection and prevention of age related mental illnesses.

Further, Depressive symptoms are present in about 15 percent of older adult community. The common signs and symptoms of depressive disorders include reduced energy and concentration, sleep problems, and decrease in appetite, weight loss and somatic complaints. And also older persons are particularly vulnerable to major depressive episodes³.

In addition, Anxiety disorders begin in early or middle adulthood, but some appear for the first time after the age of 60. Anxiety is also pervasive in older adults with dementia and symptoms of anxiety occur in 8% to 71% of patients. In addition to that, one month prevalence of anxiety disorders in persons age 65 and older is 5.5 percent⁴.

According to Ayurveda, mental abilities are categorized into three which are *Dhi* (acquisition), *Dhriti* (retention) and *Smrti* (recall). *MedhyaRasayana* therapies improve each individual aspect of mental ability and enhance the coordination among them⁵. In view of the above present work has been carried out to evaluate the efficacy of *Guduchyadi Medhya Rasayana* on Anxiety and Depression among elderly dementia individuals.

MATERIALS AND METHODS:

Study design and sampling:

Patients (55 to 75 yrs) attending O.P.D. & I.P.D. of Dept of Kayachikitsa of Institute for Postgraduate Teaching & Research in Ayurveda in Jamnagar Hospital were taken for the study. 73 patients who had symptoms of Dementia were registered to the study. For selection of the patients, purposive sampling technique was adopted irrespective of their sex, religion and occupation etc. Follow up of the patients has been done in regular intervals of 15 days.

Criteria for diagnosis:

In accordance with the ICD-10, following features are required for diagnosis

- Memory impairment
- Cognitive impairment

Criteria for inclusion:

- Patients who were willing to take trial drug.
- Patients belonging to the age group between 55-75 years.
- Evidence of decline in memory, thinking, impairment of personal activities of daily living.

Criteria for exclusion:

- Patients with evidence of delirium, Parkinsonism disease, Stroke, Intracranial Hemorrhage, Brain tumors, Alzheimer's disease, Diabetes mellitus, Users of any psychotropic drugs etc.

PARAMETERS OF ASSESSMENT

Assessment has been done using improvement of clinical features means, decrease in complains adopting a suitable scoring method⁶ on the basis of effect of therapy. Further, following rating scales were taken as subjective parameters and are considered for assessment of drug response.

1. Hamilton rating scales for Depression and Anxiety (HAM-D and HAM-A)⁷
2. Brief Psychiatric Rating Scale (BPRS)⁸

The rating scales are used to monitor the severity of depression and anxiety and are scored from (0 to 4) with total score above 9 considered as the borderline of pathology. The scales are useful to measure the effects of treatment particularly with pharmacological actions of the ingredients of the *Medhya Rasayana* drug.

INGREDIENTS OF THE DRUG:

*Guduchyadi Medhya Rasayana*⁹ is having *Guduchi* (*Tinosporacordifolia* wild), *Apamarga* (*Acaenthusasperalinn*), *Vidanga* (*Embeliaribes* Burmf), *Sankapushpi* (*Convolvulus pluricaulis* chois), *Vacha* (*Acoruscalemuslinn*), *Haritaki* (*Terminalia chebulazetz*), *Kustha* (*Saussurealappa* C.B Clarke) and *Satavari* (*Asparagus racemosus* wild), all dried ingredients were powdered and drug was prepared by adding Cow's ghee & Sugar (*Sharkara*) as in granular form.

DRUG ADMINISTRATION AND THE DURATION:

Elderly dementia patients were given *Guduchayadi Medhya Rasayana* granules (5g) three times per day for three months.

STATISTICAL ANALYSIS:

Data obtained has been analyzed before and after the treatment by adopting student paired “t” test.

OBSERVATION AND RESULTS:

The observation made on 73 patients of senile dementia showed that maximum number of patients were between the age group of 55-64, i.e. 64.3% and 59% were males, 97.2% were Hindus while, 70% were married. Concerning the chief complaint almost all the patients were having short term memory impairment (100%) while, 84% complained of long term memory impairment. Maximum number of pa-

tients (40%) had a duration of illness for two years and personal history showed that 68.4% complained of disturbed sleep and 63% had sleeping hours below six hours at night. Further, table -1 has illustrated that majority of dementia elders were having various mental disorders and 67% reported Depression while, 56% of Anxiety. In addition table-2 showed that family environmental problems faced by the dementia elders and lack of attention from their children too contributed to their present state (22%).

In this study total 73 patients were registered and 43 patients completed the treatment while, 30 patients discontinued due to irregularity and other reasons. Effects of therapy on certain parameters are presented in the table -3, table-4, table -5 and table-6 as follows.

TABLE 1: Distribution Of Psychological Factors Found In The Patients Of Senile Dementia (N=73).

Sl No	Psychological Factors	Number of patients	Prevalence %
1	Excessive Thoughts (<i>Atichinta</i>)	65	89
2	Anger (<i>Krodha</i>)	61	84
3	Worries / Grief (<i>Shoka</i>)	52	71
4	Depression(<i>Vishada</i>)	49	67
5	Anxiety (<i>Chittodvega</i>)	41	56
6	Fear (<i>Bhaya</i>)	41	56
7	Neurosis (<i>Udvega</i>)	32	44
8	Illusion (<i>Moha</i>)	18	25
9	Hate (<i>Dvesha</i>)	5	7
10	Greedy (<i>Lobha</i>)	4	5
11	Happyness (<i>Harsha</i>)	3	4
12	Jealousy (<i>Irsha</i>)	2	3
13	Sex Hunger(<i>Kama</i>)	2	3

TABLE 2: Prevalence Of Family Environmental Problems In Daily Living Among The Patients Of Senile Dementia (N=73)

Sr. No.	Family Environmental Problems	Number of Patients	Prevalence%
1	Lack of attention from their children	16	22
2	Living alone	9	12
3	Area of family conflict	8	10
4	Misbehaviors of children	2	3

TABLE 3: Effect Of *Guduchyadi Medhya Rasayana* On The Symptoms Of Senile Dementia (N=43)

Sr No	Symptoms	N	Mean B. T	Mean A. T	Mean Difference	% of Relief	S.D	S .E	t	p Value
1	Forgetfulness	43	3.04	1.00	2.04	68.60	0.53	0.82	25.20	<0.001
2	Feeling of anxiety	41	2.40	0.42	1.97	88.33	0.78	0.12	16.40	<0.001
3	Impaired attention	43	2.30	0.39	1.90	83.72	0.71	0.10	17.42	<0.001
4	Inability to concentrate	43	2.60	0.86	1.74	68.41	0.65	0.10	17.38	<0.001
5	Memory impairment of Recall of Previous Histories	32	1.93	0.95	0.97	60.66	0.83	0.12	7.71	<0.001
6	Depression	25	1.32	0.16	1.16	89.66	1.11	0.16	6.86	<0.001
7	Inability to relax	42	2.53	0.44	2.09	82.93	0.68	0.10	20.07	<0.001
8	Sleep Disturbances	43	2.32	0.13	2.18	94.96	0.62	0.09	18.5	<0.001

TABLE 4: Effect Of *Guduchyadi Medhya Rasayana* On The Symptoms Of Hamilton Anxiety Rating Scale In Senile Dementia (N=43)

Sr No	Symptoms	N	Mean B. T	Mean A. T	Mean Difference	% of Relief	S.D	S .E	t	P Value
1	Anxious Mood	38	1.84	0.25	1.58	89.47	0.63	0.10	15.57	<0.001
2	Tension	41	2.14	0.21	1.92	91.05	0.72	0.11	17.11	<0.001
3	Fear	30	1.72	0.33	1.38	81.11	0.96	0.16	8.64	<0.001
4	Insomnia	39	2.12	0.38	1.74	83.03	0.59	0.09	18.31	<0.001
5	Depression	22	1.51	0.29	1.22	74.12	0.95	0.17	7.13	<0.001
6	Intellectual(Cognitive)	38	2.15	0.57	1.57	79.03	0.81	0.12	12.25	<0.001
7	Somatic (Muscular)	31	1.42	0.27	1.15	83.71	0.97	0.16	6.80	<0.001

TABLE 5: Effect Of *Guduchyadi Medhya Rasayana* On The Symptoms Of Hamilton Depression Rating Scale In Senile Dementia (N=43)

Sr No	Symptoms	N	Mean B. T	Mean A. T	Mean Difference	% of Relief	S.D	S .E	t	P Value
1	Anxiety Psychic	40	2.27	0.35	1.92	86.25	0.61	0.09	19.78	<0.001
2	Anxiety Somatic	38	2.21	0.31	1.89	86.40	0.68	0.11	16.94	<0.001
3	Helplessness	22	2.40	0.54	1.86	82.19	0.63	0.13	13.66	<0.001
4	Hopelessness	23	2.30	0.52	1.78	82.24	0.67	0.13	12.73	<0.001
5	Worthlessness	12	2.73	0.86	1.86	70.13	0.74	0.19	9.72	<0.001

TABLE 6: Effect Of *Guduchyadi Medhya Rasayana* On The Symptoms Of Brief Psychiatric Rating Scale In Senile Dementia (N=43).

Sr No	Symptoms	N	Mean B. T	Mean A. T	Mean Difference	% of Relief	S.D	S .E	t	P Value
1	Somatic Concern	43	3.00	0.88	2.11	69.37	0.79	0.12	17.49	<0.001
2	Anxiety	40	3.10	0.90	2.20	71.29	0.72	0.11	19.23	<0.001
3	Emotional Withdrawal	4	2.25	0.75	1.50	66.60	0.57	0.28	5.19	<0.05
4	Tension	41	3.04	1.00	2.04	67.27	0.73	0.11	17.72	<0.001
5	Depressive Mood	23	2.62	1.00	1.62	61.95	0.76	0.15	10.34	<0.001
6	Excitement	3	3.33	1.33	2.00	58.80	1.00	0.57	3.46	> 0.05

DISCUSSION

Ageing is an inevitable and irreversible biological process which leads to many socio-economic challenges experienced by the individual resulting from their physical and psychological changes. Biological ageing changes at the cellular level giving rise to changes of the organs of the body and make individuals vulnerable to various non communicable diseases¹⁰. In addition to that, altered level of functioning of the brain and the nervous system can give rise to slower responses to stimuli and many other conditions which affect the mental health of the elderly population including depression, anxiety, dementia and Alzheimer's diseases.

In Ayurveda, *Rasayana* therapy is exclusively devoted to the study of ageing and its prevention with the help of *Rasayana* drugs. *Rasayana* is one of the acclaimed concepts that deals with rejuvenation of physical body and wellbeing of psyche (mind). Among the *Rasayana*, *Medhya Rasayana* drugs are having specific effect on brain and nervous system which are beneficial for *Medhya* which is responsible for intelligence, power of retention and power of memory in human beings¹¹. Moreover, various scientific studies have proven that *Medhya Rasayana* remedies have different degree of nootropic, anti anxiety, anti depressant and psychotropic potential¹². So taking above views in to consideration, the study has been focused to find out the efficacy of *Guduchyadi Medhya Rasayana* on anxiety and depression among dementia elderly individuals.

In this study all dementia patients were between the age group of 55 to 75 years. Majority of them belonged to the age group of 55 to 64 years. Because this age group has just attained old age, they may feel worried as well as more conscious about their memory decline. In this series, majority (60%) were male, while (40%) were female. This showed moderate gender difference in this study. This fact is in contrast with the reported findings. Hence difference may be partly due to male persons being socially dominant and partly less awareness among female persons¹³.

In this sequence, maximum patients were found within the two year period. Selected age group was 55 to 75 years and it can be said that memory impairment may have initiated with ageing. Further, studies have revealed that depression and anxiety go together in elderly¹⁴. Considering the sleeping time, maximum of the patients have been reported with disturbances of sleep. Moreover, fear, anxiety and stress were reported from those elders (table -1) and it also contributed to the production of sleeplessness.¹⁵ It is showed that family environmental difficulties affect the status of elderly patients. Some elders were experiencing lack of attention from their children. Those factors produce fear, anger, worry, excessive thoughts, anxiety, and depression in their mind. In this study almost all the patients were reported with short term memory impairment while, 74% were having long term memory impairment. In addition, various psychological factors have been identified and reported by the dementia individuals and majority was having excessive thoughts, anger, worries, depression, anxiety, and fearful feelings. In Ayurveda, *Susruta Samhita* clearly mentions those factors which are responsible for the generation of mental disorders in the mind¹⁶.

To a greater distance, *Medhya Rasayana* drugs are special Ayurvedic neuronutraceutical drugs which are specific to brain and nervous system. They are claimed to promote cognitive function of the brain as related to brain ageing¹⁷. Some ingredients of *Guduchyadi Medhya Rasayana* are Shankapushpi (*Convolvulus pluricaulischois*), Haritaki (*Terminalia ChebulaZetz*) and Satavari (*Asparagus Racemosus wild*), which have properties of *Medhya* as well as *Rasayana* potential.¹⁸ And also pharmacological studies revealed that anti stress property of Satavari (*Asparagus Racemosus wild*) in different models of stress in mice¹⁹. Recent research advances reported that Shankapushpi possesses Anxiolytic, Memory enhancing and Mood elevating effects²⁰. Moreover, pharmacological actions have revealed that Shankapushpi²¹ and Vacha (*Acorascalamus Linn*)²² are having sedative and Tranquillizing effects. So

those potentials have contributed to better relief of anxiety, depression and sleep disturbances of dementia elders. Further, *Guduchyadi MedhyaRasayana* is having cow's ghee and it is obvious that cow's ghee based formulations are widely used in Ayurveda because of its innate potentials and ability to enhance the properties of ingredients. In addition, experimental studies revealed that *Guduchyadi Grita Rasayana* having Anti depressant and Anxiolytic potential²³. Regarding the relief of feeling of anxiety (88.33%), Depression (89.66%) and sleep disturbance (94.96%) that effect of therapy were obtained by *MedhyaRasayana* those were statistically highly significant at the level of $p < 0.001$ (table-3). Effect of therapy on rating scales (HAM-D and HAM-A) showed that *Guduchyadi MedhyaRasayana* has provided better relief on the symptoms of both rating scales being statistically highly significant at the level of $p < 0.001$ (table - 4 & 5) because of its ingredients possessing neuro pharmacological actions such as memory enhancement, anti-stressing abilities, anxiolytic, antidepressant, nootropic, tranquility and sedative activities.²⁴ Further, drug effects on the symptoms of Brief Psychiatric Rating Scale showed the relief on anxiety and depressive mood being statistically highly significant at the level of $p < 0.001$ (table-6) because properties of the drug had counteract symptoms of Brief Psychiatric Rating Scale.

CONCLUSION

Mental health issues such as cognitive impairment, anxiety and depression are inevitable effects of the ageing process. In Ayurveda, *Medhya Rasayana* medicine promotes intelligence, cognitive ability and overall status of mental health. The study showed that *Guduchyadi Medhya Rasayana* therapy played an import role in overcoming anxiety and depression among dementia elderly individuals.

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