



EVALUATION OF EFFECT OF JATAMANSI ON RAJONIVRITTI RELATED SYMPTOMS LIKE ANXIETY, DEPRESSION, SLEEP DISTURBANCE, LOSS OF MEMORY AND BLOOD PRESSURE.

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ABSTRACT:

Rajonivritti (Menopause) is a marker of aging in women. In *Vridhastha*, *Rajonivritti* is a major event which is led by *Vata dosha*. The ancient Acharya termed it as a normal physiology. In Ayurvedic classics, though *Rajonivritti* is not described separately as a pathological condition, but each and every female surely knows about the negative changes associated with the onset of menopause (*Rajonivritti*). The objective of present research is to evaluate the efficacy of *Jatamansi* on *Rajonivritti* related symptoms like anxiety, depression, sleep disturbance, loss of memory and blood pressure. In this study, sample size is 60, volunteers were selected by simple random sampling and treated with *Jatamansi Churna* [Latin name- *Nordostachys Jatamansi*], follow up was taken on 7th, 14th, 21st and 28th day. The recorded severity of menopausal symptoms before and after treatment with *Jatamansi churna* was compared and difference was noted.

KEYWORDS: *Rajonivritti*, *Jatamansi churna*

INTRODUCTION:

Men and women reach old age with different prospects for older age. So far as the conditioning of the females is concerned, the phase of 'Menarche' and 'Menopause' have great importance and influence on their physical, psychological, social as well as emotional existence. As both these phases are related with post-birth changes, they should be tackled with the same caution and care but sometimes older age and lack of some qualities all of a sudden from the life makes the menopausal condition more severe and difficult to handle without proper understanding medical advice, social support as well. The second phase of life is more vulnerable for women, as along with aging, she suffers from inevitable scars of menopause. The menopause (*Rajonivritti*) is a natural phenomenon and one of the life's milestones. Menopause is defined as the period when permanent cessation of menstruation takes place. Normally, it occurs at the age of 45 to 55 years¹. In Ayurvedic classics, *Rajonivritti* is not described separately as a pathological condition or severe health problem. The ancient Acharya termed it as a normal physiology. Though *Rajonivritti* is not described separately as a diseased condition in the classics, but *Rajonivritti Kala* is mentioned by Acharyas. Acharya Sushruta mentioned 12 years as *Rajah Pravrutti kala* and 50 years as *Rajonivritti kala*^{2,3}. The term '*Rajonivritti*' is made up of two different words viz. '*Rajah*' and '*Nivritti*'. Here, in this context, the meaning of *Rajah* taken into consideration is *artava*⁴ and *stripushpa* i.e. menstrual blood. And the meaning of *Nivritti* is taken as ending or ceasing⁵. Thus, the word '*Rajonivritti*' means stoppage of *Artava Pravrutti* or cessation of menses.

According to a PAN India survey by IMS, the average age of menopause of an Indian woman is 46.2 years, which means a woman spends nearly up to one third of her life in menopausal stage.⁶ Though, menopause is a natural event as a part of the normal process of aging, it is turning into a major health problem in recent years in developed as well as developing countries like India. Every woman faces various physiological and psychological changes during this "change of life" as a part of hormonal derangement. Sometimes such disturbances attain the stage of disease or syndrome called as "Menopausal Syndrome" which is accompanied by various vasomotor, psychological, genital, locomotors and GIT related symptoms.

There has been extensive research on Menopause in the West, but in India only a few research institutes have recognized the potential of research on this subject. Also the modern science mainly concentrates on tackling the physical problems of Menopause but the psychological aspect is often neglected. Therefore, there is a wide scope research to find out a safest remedy from Ayurveda for the management of this stage. So here an attempt has been made to focus on the other side of the coin i.e. the psychological aspects of a Menopausal woman which are anxiety, depression, sleep disturbance, loss of memory.

Nowadays, globally, a large section of humanity is returning towards natural ways of life and they have lot of expectations from Ayurveda, which is the way of life having holistic approach rather than only a system of medicine. *Jatamansi* (Latin name- *Nordostachys Jatamansi*) is a known calming herb in Ayurveda and Unani because of its medicinal values. It is a natural brain nervine tonic and a memory enhancer, having calm, peaceful and relaxing features. Hence, in this study, *Jatamansi* is selected to evaluate alleviation of *Rajonivritti* (menopause) related symptoms like anxiety, depression, sleep disturbance, loss of memory and blood pressure.

OBJECTIVE:

To evaluate whether *Jatamansi* can alleviate *Rajonivritti* related symptoms like anxiety, depression, sleep disturbances, loss of memory and blood pressure.

MATERIAL AND METHOD:

1. SELECTION OF VOLUNTEERS:

a. **Field of selection:** 60 volunteers were selected from OPD/ IPD of Ayurved Hospital.

b. **Inclusive criteria:** Volunteers between the ages of 44-55 years, who have missed 12 months of menstrual cycle from various occupations were randomly selected for the study.

c. Exclusive criteria:

Women suffering from any chronic systemic diseases like HTN, DM, etc.

Women who are taking antidepressants drugs, HRT.

Women who have undergone hysterectomy.

2. INSTRUMENTS:

Instruments used for measuring blood pressure were-

1. B.P. apparatus- Sphygmomanometer

2. Stethoscope

3. DRUG:

Most women experience some symptoms around menopause like anxiety, depression, loss of memory, sleep disturbances, change in blood pressure. The duration and severity of these symptoms varies from woman to woman. So, in this case *Jatamansi* could be the ideal choice as it has *Medhya* effect. *Jatamansi* is known as the molecular nutrients for the brain, which is claimed to relieve anxiety, stress and mental fatigue. So, *churna* of the root of *Jatamansi* was selected. The drug was authenticated from authorized laboratory. *Churna* (powder) of *Jatamansi* roots was prepared by grinding machine and then standardization of the drug was done.

Type of Study: Prospective, randomized clinical trial

Study Design:

- Women between the ages of 44-55 years were selected for study who have missed 12 months of menstrual cycle.
- Post menopausal state of woman was confirmed.
- Blood pressure of every woman was recorded before applying criteria for assessment.
- Then qualitative parameters were assessed and the severity of menopausal symptoms was recorded. And *Jatamansi churna* [Latin name- *Nordostachys Jatamansi*] 2 gm was given with lukewarm water twice a day for 28 days.
- Follow up was taken after 7, 14, 21 & 28 days.
- After treatment of 28 days, the same volunteers were examined by same qualitative and quantitative parameters.
- The recorded severity of menopausal symptoms before and after treatment with *Jatamansi churna* 2gm was compared and difference was noted.

For this study, following methods are used:

- i. Specific case format is prepared for study
- ii. Volunteers are selected randomly.
- iii. Informed consent of volunteer is taken.
- iv. Socio-demographic study: It is done by *Prashna Pariksha* i.e by Interrogation. It includes name, age, religion, occupation, economic status, etc.

CRITERIA FOR ASSESSMENT OF POSTMENOPAUSAL SYMPTOMS:

The Hamilton Rating Scale and MENO-D: A rating scale were used for this.^{7,8}

A. Subjective Parameter

ANXIETY:

- 0-No anxiety
- 1-Increased anxiety when performing in public
- 2-Highly anxious when doing new tasks
- 3-Heightened anxiety when doing routine and familiar tasks
- 4- Panic attacks, highly anxious when doing ordinary and family tasks.

DEPRESSED MOOD: (sadness, hopeless, helpless, worthless)

- 0-Absent
- 1-These feeling states indicated only on questioning
- 2-These feeling states spontaneously reported verbally
- 3-Communicates feeling states non verbally i.e. through facial expression, posture, voice and tendency to weep
- 4- Volunteer reports virtually only. These feeling states in his spontaneous verbal and non-verbal communication

SLEEP DISTURBANCE:

- 0-No sleep problems
- 1-Sleep broken by brief waking once or twice per night, but easily return to sleep. 2-Sleep broken by waking several times per night but easily returns to sleep
- 3-Waking up three or more times per night due to hot flushes, and sweating, plus difficulty returning to sleep
- 4- Sleeping two or less hours per night consistently. Sweating, hot flushes, feeling hot then cold, interrupted sleep all night

MEMORY:

- 0-No change in memory
- 1-Mild problems remembering names and numbers
- 2-Need to make lists to function at work or home
- 3-Impaired memory leading to dysfunction
- 4-Severe loss of memory leading to inability to function

Scoring of complaints:

- 0 Grade – No complaints

1 Grade – Mild

2 & 3 Grade - Moderate

4 Grade – Severe

B. Objective Parameter:

Blood pressure is recorded by Sphygmomanometer in standing, sitting and lying down position.

OBSERVATION AND RESULTS:

The present study was carried out on total 60 volunteers and the following observations were made.

TABLE NO.1- DISTRIBUTION ACCORDING TO AGE

AGE IN YEARS	NO. OF VOLUNTEERS	PERCENTAGE
44 -46	21	35%
47 -49	14	23.33%
50 -52	18	30%
53 -55	7	11.67%
Total	60	100

TABLE NO.2- DISTRIBUTION ACCORDING TO SEX

SEX	NO. OF VOLUNTEERS	PERCENTAGE
MALE	0	0
FEMALE	60	100%
Total	60	100

TABLE NO.3- DISTRIBUTION ACCORDING TO EDUCATIONAL STATUS

EDUCATION	NO. OF VOLUNTEERS	PERCENTAGE
EDUCATED	38	63.33%
UNEDUCATED	22	36.67%
Total	60	100

TABLE NO.4- DISTRIBUTION ACCORDING TO OCCUPATION

OCCUPATION	NO. OF VOLUNTEERS	PERCENTAGE
HOUSEWIFE	39	65%
FARMER	12	20%
TEACHER	2	3.33%
WORKER	7	11.67%
Total	60	100

TABLE NO.5- DISTRIBUTION ACCORDING TO RELIGION

RELIGION	NO. OF VOLUNTEERS	PERCENTAGE
HINDU	50	83.33%
MUSLIM	10	16.67%
Total	60	100

TABLE NO.6- DISTRIBUTION ACCORDING TO ECONOMICAL STATUS

ECONOMICALSTATUS	NO. OF VOLUNTEERS	PERCENTAGE
UPPER	0	0%
MIDDLE	45	75%
LOWER	15	25%
Total	60	100

TABLE NO.7- DISTRIBUTION ACCORDING TO NUMBER OF MENOPAUSAL SYMPTOMS

NO. OF MENOPAUSAL SYMPTOMS	NO. OF VOLUNTEERS	PERCENTAGE
1	0	0%
2	2	3.33%
3	28	46.67%

4	30	50%
Total	60	100

TABLE NO.8- DISTRIBUTION ACCORDING TO MENOPAUSALSYMPTOMS DURATION

MENOPAUSALSYMPTOMS DURATION (IN YEARS)	NO. OF VOLUNTEERS	PERCENTAGE
0-1yr	5	8.33%
1-2yr	32	53.34%
2-3yr	14	23.33%
3-4yr	7	11.67%
4-5yr	2	3.33%
Total	60	100

TABLE NO.9- DISTRIBUTION ACCORDING TO AGE OF MENARCHE

AGE OF MENARCHE	NO. OF VOLUNTEERS	PERCENTAGE
11yr	5	8.33%
12yr	28	46.67%
13yr	21	35%
14yr	6	10%
Total	60	100

TABLE NO.10- DISTRIBUTION ACCORDING TO REGULARITY OF MENSTRUAL CYCLE

REGULARITY	NO. OF VOLUNTEERS	PERCENTAGE
REGULAR	56	93.33%
IRREGULAR	4	6.67%
Total	60	100

TABLE NO.11- DISTRIBUTION ACCORDING TO AMOUNT OF BLOOD FLOW

BLOOD FLOW	NO. OF VOLUNTEERS	PERCENTAGE
NORMAL	48	80%
HEAVY	3	5%
SCANTY	9	15%
Total	60	100

TABLE NO.12- DISTRIBUTION ACCORDING TO NATURE OF BLOOD FLOW

NATURE	NO. OF VOLUNTEERS	PERCENTAGE
PAINFUL	7	11.67%
PAINLESS	53	88.33%
Total	60	100

TABLE NO.13: DISTRIBUTION ACCORDING TO DURATION OF MENOPAUSE

DURATION OF MENOPAUSE (IN YEARS)	NO. OF VOLUNTEERS	PERCENTAGE
1-2yr	35	58.34%
3-4yr	14	23.33%
5-6yr	8	13.33%
7-8yr	2	3.33%
9-10yr	1	1.67%
Total	60	100

TABLE NO.14- DISTRIBUTION ACCORDING TO *KOSHITA*

<i>KOSHITA</i>	NO. OF VOLUNTEERS	PERCENTAGE
<i>KRUR</i>	18	30%
<i>MRUDU</i>	11	18.33%
<i>MADHYAM</i>	31	51.67%

Total	60	100
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TABLE NO.15- DISTRIBUTION ACCORDING TO *AGNI*

<i>AGNI</i>	NO. OF VOLUNTEERS	PERCENTAGE
<i>SAMAGNI</i>	0	0%
<i>MANDAGNI</i>	13	21.66%
<i>VISHAMAGNI</i>	22	36.67%
<i>TIKSHNAGNI</i>	25	41.67%
Total	60	100

TABLE NO.16- DISTRIBUTION ACCORDING TO *PRAKRITI*

<i>PRAKRITI</i>	NO. OF VOLUNTEERS	PERCENTAGE
<i>VATA-PITTA</i>	26	43.33%
<i>VATA-KAPHA</i>	4	6.67%
<i>PITTA-VATA</i>	12	20%
<i>PITTA-KAPHA</i>	6	10%
<i>KAPHA-VATA</i>	6	10%
<i>KAPHA-PITTA</i>	6	10%
Total	40	100

STATISTICAL ANALYSIS OF FINDINGS:

Effect of therapy is assessed by paired “t” test. The level of significance is set at 5%. $P < 0.05$, $t\text{-calculated} > t\text{-table}$ indicate significance of results. Following table shows the effect of *Jatamansi Churna* on Anxiety, depression, sleep disturbance, loss of memory and blood pressure. (Recorded before and after treatment)

1. Effect of *Jatamansi Churna* on Anxiety:

TABLE NO.17-

	Mean	S.D.	S.E.	T	P	Significance
BT-AT	2.117	0.84556	0.110085	19.39	<0.0001	Yes

2. Effect of *Jatamansi Churna* on Depression:

TABLE NO.18-

	Mean	S.D.	S.E.	T	P	Significance
BT-AT	1.567	1.0793	0.1405	11.24	<0.0001	Yes

3. Effect of *Jatamansi Churna* on Sleep disturbance:

TABLE NO.19-

	Mean	S.D.	S.E.	T	P	Significance
BT-AT	2.667	0.6806	0.8860	30	<0.0001	Yes

4. Effect of *Jatamansi Churna* on Loss of memory:

TABLE NO.20-

	Mean	S.D.	S.E.	T	P	Significance
BT-AT	1.233	0.9273	0.120726	10.30	<0.0001	Yes

EFFECT OF *JATAMANSI* ON BLOOD PRESSURE IN DIFFERENT POSITIONS:**1) IN LYING DOWN POSITION-**

Effect of *Jatamansi* on systolic and diastolic blood pressure in Lying down position:

TABLE NO.21-

BT-AT	Mean	S.D.	S.E.	T	P	Significance
Systolic B.P.	5.900	8.2126	1.06921	5.565	<0.0001	Yes
Diastolic B.P.	2.767	4.85856	0.632543	4.411	<0.0001	Yes

2) IN SITTING POSITION-

Effect of *Jatamansi* on systolic and diastolic blood pressure in sitting position:

TABLE NO.22-

BT-AT	Mean	S.D.	S.E.	T	P	Significance
Systolic B.P.	6.733	8.5169	1.108827	6.124	<0.0001	Yes
Diastolic B.P.	4.333	4.8316	0.629033	6.947	<0.0001	Yes

3) IN STANDING POSITION-

Effect of *Jatamansi* on systolic and diastolic blood pressure instanding position:

TABLE NO.23-

BT-AT	Mean	S.D.	S.E.	T	P	Significance
SystolicB.P.	6.247	7.4694	0.972452	6.499	<0.0001	Yes
Diastolic B.P.	3.767	5.549	0.722432	5.258	<0.0001	Yes

EFFECT OF THERAPY

Symptoms found in number of volunteers with gradations 4,3,2,1 and 0 are as follows-

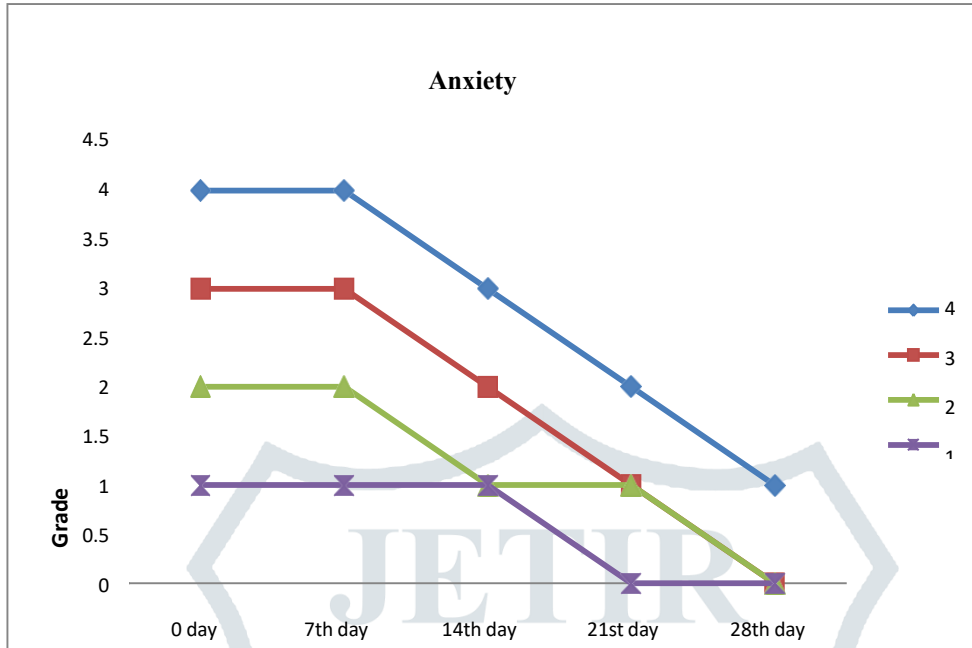
TABLE NO.24-

Symptoms	Number of volunteers with gradations				
	4 Grade	3 Grade	2 Grade	1 Grade	0 Grade
Anxiety	6	24	20	6	8
Depression	6	19	8	15	12
Sleep Disturbance	9	38	9	4	0
Loss of Memory	3	7	17	17	16

The effect of therapy on 0, 7th, 14th, 21st and 28th day can begraphically represented as follows-

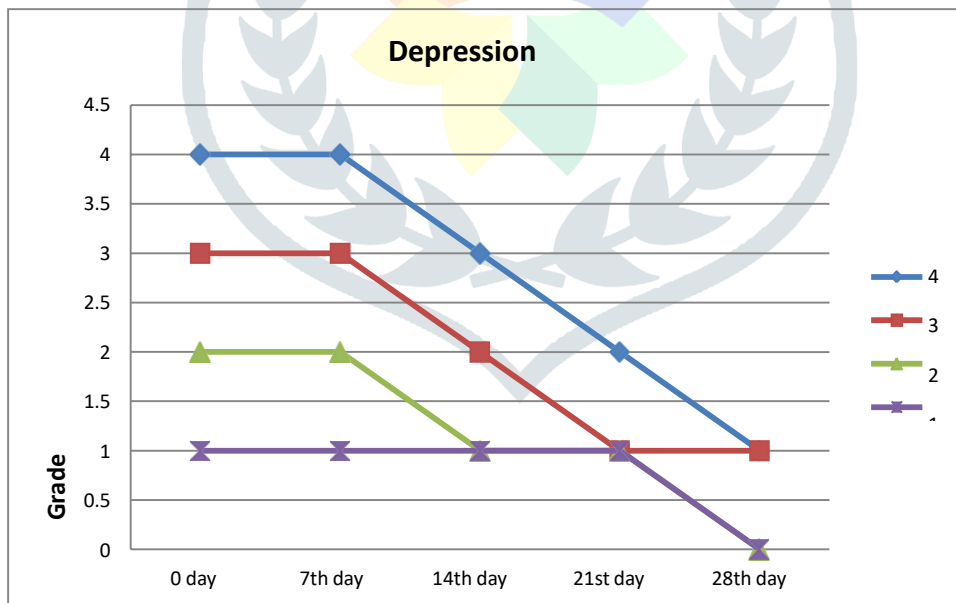
The effect of therapy on Anxiety-

GRAPH NO.1 –



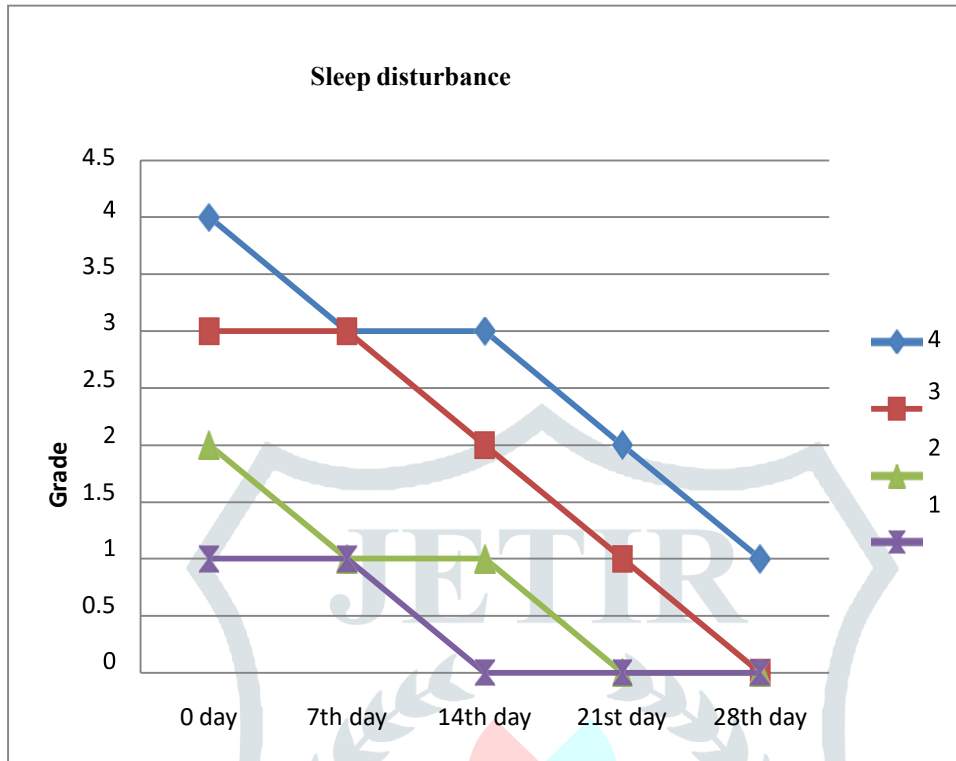
The effect of therapy on Depression-

GRAPH NO.2-



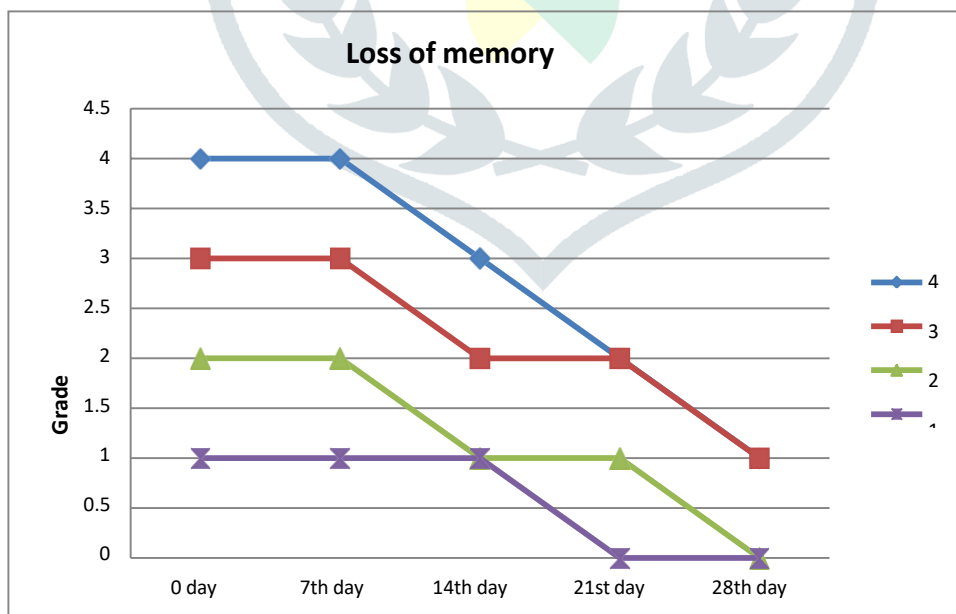
The effect of therapy on Sleep disturbance-

GRAPH NO.3-



The effect of therapy on Loss of memory-

GRAPH NO.4-



Effect of therapy on Blood Pressure:

Effect of therapy on average blood pressure in lying down, sitting and standing position is as follows-

TABLE NO.25-

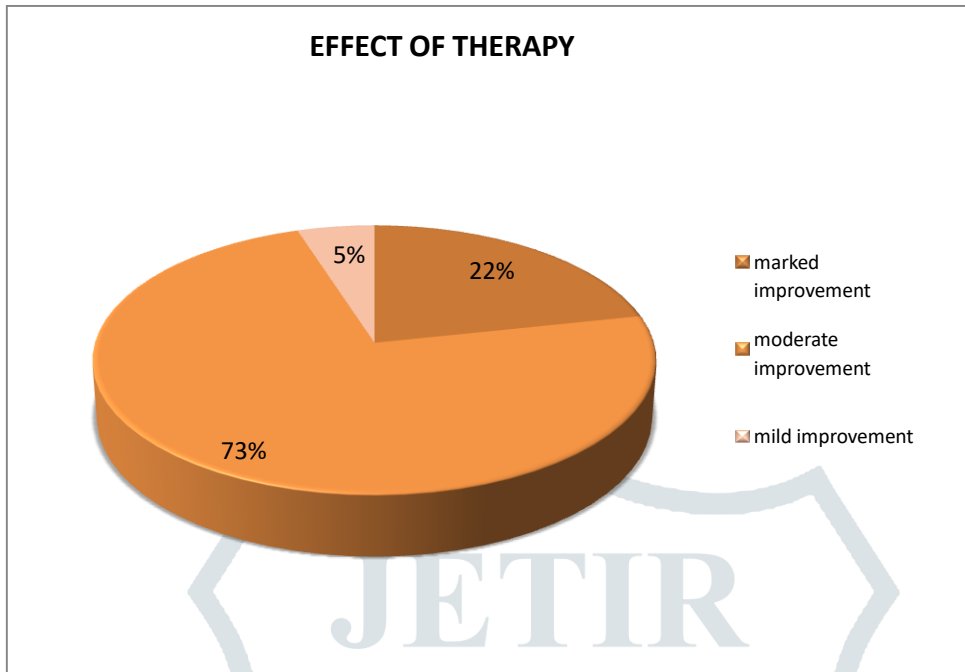
AverageBlood Pressure(mm of Hg)	Lying down		Sitting		Standing	
	B.T.	A.T.	B.T.	A.T.	B.T.	A.T.
Average SystolicBP	126	120	128	122	124	118
Average DiastolicBP	76	74	80	76	78	74

Final Interpretation of Results-

TABLE NO.26-

Criteria	Relief (%)	No. of volunteers
Complete remission	100 %	0 (0%)
Marked improvement	<100->75%	13 (21.67%)
Moderate improvement	<75->50%	44 (73.33%)
Mild improvement	<50->25%	3 (5%)
Unchanged	<25% or no change	0 (0%)

GRAPH NO.5-



Above table shows, out of 60 volunteers 13 (21.67%) had marked improvement, 44 (73.33%) had moderate improvement and 3 (5%) had mild improvement.

DISCUSSION:

Effect of Therapy:

The effect of therapy on various parameters was as follows-

Anxiety:

Jatamansi soothes the mind and does not cause sedation but relaxes the nervous system. It reduces all the three *doshas* especially *Kapha* and *Pitta*. Root of *Jatamansi* acts as a memory enhancer, neuro protective and gives calming effect. Thus, it reduces stress, tension and anxiety. Volunteers having severe anxiety i.e. grade 4 reduced to grade 1 at the end of 28 days, which means that they require treatment for longer duration. Volunteers having moderate anxiety i.e. grade 3 and grade 2 reduced to grade 0 at the end of 28 days, which means that they got full relief. Volunteers having mild anxiety i.e. grade 1 reduced to grade 0 at the end of 21 days, which means that they got full relief in 21 days of treatment.

Depression:

Jatamansi increases Serotonin level. Also *Jatamansi* is present as a *Medhya* and *Bhutaghna* drug. Thus by *snigdha guna* and *sheeta virya*, it smoothens the mind and lowers depression. Volunteers having severe depression i.e. grade 4 and moderate depression i.e. grade 3 reduced to grade 1 at the end of 28 days, which means that they require treatment for longer duration. Volunteers having moderate i.e. grade 2 and mild depression grade 1 reduced to grade 0 at the end of 28 days, which means that they got full relief at the end of treatment.

Sleep disturbance:

Vata dosha is mainly responsible for sleep disturbance. Because of the *Snigdha guna* of *Jatamansi*, it alleviates the aggravated *vata*. Also, in menopausal women anxiety is one of the causes of sleep disturbance. *Jatamansi* lowers anxiety and thus induces sound sleep. Volunteers having severe Sleep disturbance i.e. grade 4 reduced to grade 1 at the end of 28 days, which means that they require treatment for longer duration. Volunteers having moderate Sleep disturbance i.e. grade 3 reduced to grade 0 at the end of 28 days, which means that they got full relief at the end of treatment and grade 2 reduced to grade 0 at the end of 21 days, which means that they got full relief in 21 days of treatment. Volunteers having mild Sleep disturbance i.e. grade 1 reduced to grade 0 at the end of 14 days, which means that they got full relief in just 14 days of treatment.

Loss of memory:

Jatamansi has *Tikta Rasa* and *Laghu Guna*, *Madhura Vipaka*, *Shita Virya* and *Tridoshaghna* properties. *Tikta Rasa* has direct action on promotion of *Medha*, *Madhura Vipaka* stimulates five senses and mind, *Shita Virya* drug increases the *Kapha* which nourishes the *Dhatu* and *Tridoshaghna* properties keeps the status of *Dosha* in *Samyavastha*. Thus, it corrects loss of memory. Volunteers having severe i.e. grade 4 and moderate i.e. grade 3 loss of memory reduced to grade 1 at the end of 28 days, which means that they require treatment for longer duration. Volunteers having moderate loss of memory i.e. grade 2 reduced to grade 0 at the end of 28 days, which means that they got full relief. Volunteers having mild Loss of memory i.e. grade 1 reduced to grade 0 at the end of 21 days, which means that they got full relief in 21 days of treatment.

Blood Pressure:

High blood pressure is a result of abnormal functioning of *Vyana* and *Udana Vayu*, *Ranjaka Pitta* and *Avalambaka Kapha* including loss of their functional integrity and coordination. As *Jatamansi* have *Tikta*, *Kashaya*, *Madhur Rasa*, *Sheeta Virya* and *Katu Vipaka*, it is *Tridoshshamaka*. So it is effective in increased blood pressure. Also, increase in blood pressure can be compared to a condition called *Raktagata Vata*. In this condition vitiated *vata* gets lodged in the circulating *Rakta dhatu* (blood) and causes disturbances in its circulation. Here, *Jatamansi* naturally lowers increased blood pressure by dilating the arteries. In the present clinical study, it was observed that there was a marked reduction in the levels of average systolic blood pressure and diastolic blood pressure. The average systolic blood pressure reduced from 126 to 120 in lying down position, from 128 to 122 in sitting position, and from 124 to 118 in standing position. The average diastolic blood pressure reduced from 76 to 74 in lying down position, from 80 to 76 in sitting position, and from 78 to 74 in standing position.

CONCLUSIONS:

- The age of Menopause has been found lower (44-46 years) in majority of volunteers (35%), which supporting to the evidence that due to unhealthy lifestyle age of menopause is decreased in women.
- Most of the volunteers are educated (63.33%) and housewife (65%). They belong to middle socioeconomical status (75%) and of *Vatapitta* dominant *Prakriti* (43.33%).
- No any Co-relation is observed between onset of Menopause and Age of menarche, *Koshta* and *Agni*.
- Symptoms like anxiety, depression, sleep disturbance, loss of memory, increase in blood pressure, etc. are found in menopausal women.
- Analysis of the menopausal symptoms duration of all volunteers showed that menopausal syndrome runs a chronic course, as more volunteers are having 1-2 years of the menopausal symptom duration.
- *Jatamansi* showed better results in moderate and mild severity of anxiety, depression, sleep disturbance and loss of memory. Whereas severe grade of anxiety, depression, sleep disturbance and loss of memory require treatment for longer duration.
- *Jatamansi* showed marked reduction in systolic and diastolic blood pressure.
- However results may vary on large scale.

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