

ROLE OF PANCHAGAVYA GHRITA ON SMRITI W.S.R. SHORT TERM MEMORY IN OLD AGE

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ABSTRACT:

Short Term Memory loss is a common problem in old age. This is actually a mechanical process depends on power of senses and level of mind. Acharya Sharangdhara narrated decline of it in particular decade. The process of degeneration of cell begins with its formation. Hence, it is to be pleased by using regular use of micro-nutrients. Acharya Charak narrated *ghrita* as nutrient and pleasant material. The study included Anxiety rating scale and depression rating scale to rule out anxiety and depression respectively, PGI memory scale was used to assess memory. 10 gms *Panchagavya Ghrita* and plain *Gau Ghrita* was used orally with luke warm water on empty stomach in morning for 90 days in two different groups. Group A presented significant results in Anxiety Rating Scale (P = 0.016), Depression Rating Scale (P = 0.064) and PGI memory Scale (P = 0.003). Group B presented highly Significant results in Depression Rating Scale (P = <0.001) and PGI memory Scale (P = <0.001). While, Anxiety Rating Scale (P = 0.016) shows significant result. S. HDL (P = 0.010) was increased significantly, whereas, S. Creatinine (P = 0.038) and Uric acid (P = 0.041) were decreased significantly. No significant increase was found in S. LDL and S. VLDL value shows decrease but not significant. Other parameters were having insignificant increase or decrease statistically. Thus, the study concluded that drug works on short term memory as the study duration was 3 months.

Keywords: Ghee, Memory problem, Ageing, *Rasayana*, Micro-nutrient.

INTRODUCTION: *Smriti* refers to recall of the collected dataⁱ. It is important part of the whole process involved in the formation of the faculty of memory tooⁱⁱ. Memory is the faculty of the mind by which information is encoded, stored, and retrievedⁱⁱⁱ. There are two types of memories long term memory and short term memory. Information that is retained on the order of seconds or minutes is usually referred to as short-term memory and is thought to represent a memory system distinct from long-term memory. Working memory^{iv}, which comprises short-term memory, refers to the short-term store required to perform certain

mental operations during retention^v. Short term memory is the capacity for holding, but not manipulating, a small amount of information in mind in an active, readily available state for a short period of time. The duration of short-term memory is believed to be in the order of seconds^{vi}. In Ayurveda, *Acharya Sharangdhara* stated that decline in memory starts from 4th decade of life^{vii}. But, subtle memory changes can begin as early as the early or middle twenties and continue to decline linearly with age^{viii}. Some aspects of age-related memory decline begin in healthy educated adults when they are in their 20s and 30s^{ix}. Some authors distinguish

between 'lifelong decline' and 'late-life decline'^x. In fact, memory problem is very common factor in advancing age.

Various therapies were experimented to rehabilitate or increase memory.^{xi} *Rasayana* therapy is suggested to prevent this decline^{xii}. Numbers of *Rasayana* herbs and formulations are indicated in *Samhitas*. *Panchagavya Ghrita* is indicated in *Apasmara Chikitsa*, where memory loss is very common feature. Moreover, in psychiatric disorders *Panchagavya Ghrita* is effective in improving quality of life^{xiii}. Here, in this study memory was assessed by symptomatically and PGI memory scale before and after treatment.

Objectives:

1. Critical evaluation of concept of memory.
2. To evaluate the efficacy of *Panchagavya Ghrita* on memory.

a. Selection criteria

Patients: Individuals fulfilling the criteria were selected for present study. The special proforma was prepared.

- Volunteers were selected having age between 41 to 70 years.
- Volunteers were selected having age related complaints according to selection criteria.

b. Excluding criteria

- Volunteers were excluded having any diseases.
- Contra indicated person of *Ghrita* was not taken for the study.
- Volunteers were excluded below 40 and above 70 of age.

MATERIAL AND METHODS

c) Drug selection and posology:

In group A, 10 gms *Panchagavya Ghrita*^{xiv} was used orally with luke warm water on empty stomach in morning for 90 days. In group B, 10 gms plain cow *Ghrita* was used orally with luke warm water on empty stomach in morning for 90 days.

d) Criteria of assessment

Memory: For the assessment of memory three subjective parameters were selected.

1. PGI memory scale –National psychological corporation, Agra.
2. Hamilton's anxiety rating scale (HAM-A)
3. Hamilton Depression Rating Scale

Systemic Examination: Systemic examination was performed as per *Dhatu Kshaya Pariksha*.

Endurance Test: Endurance test was performed with the help of specific cycle.

Investigations: 1) Routine hematological: Routine hematological test was performed by Hb%, TC, DC, ESR, PCV, RBC count, 2) Urine investigation: Physical, Chemical and Microscopic examination 3) Stool investigation: Microscopic and Macroscopic examination 4) Lipid profile 5) Renal function test 6) Liver function test 7) Fat monitor and BMI: Assessment of *Mamsa* and *Meda Dhatu*.

ECG and other necessary investigation will be used for exclusion criteria as per need.

Statistical Evaluation of results: The obtained data were analyzed statistically. The values were expressed as percentage of relief and Mean SEM. The data were analyzed by paired 't' test.

Observations & Results:

Observation was obtained on the basis of selection parameters. In this study, PGI memory scale was used to evaluate the status of memory. Hamilton's anxiety rating scale was used to evaluate the anxiety percentage in the person. And Hamilton's Depression rating scale was used to assess the severity of depression. Here in this work, mild memory loss was observed maximum no. of Patients i.e. 60 % and 24 % Patients were having

Moderate memory loss was observed. While, memory loss was observed. 16 % of the Patients were suffering severe

Effect on Objective Parameters in 07 Patients of Group A

	Mean Score			% Relief	SD	SE	t	P (n = 07)
	B.T.	A.T.	Diff.					
Anxiety Rating Scale	14.857	6.143	8.714	58.65↓	6.969	2.634	t = 3.308	P = 0.016
Depression Rating Scale	11.857	4.857	7.000	59.04↓	8.165	3.086	t = 2.268	P = 0.064
PGI Memory Scale	30.714	43.143	-12.429	40.47↑	6.973	2.635	t = -4.716	P = 0.003

Effect on Objective Parameters: in this study, Group A shows Significant results in Anxiety Rating Scale (P = 0.016),

Depression Rating Scale (P = 0.064) and PGI memory Scale (P = 0.003).

Effect on Objective Parameters in 10 Patients of Group B

	Mean Score			% Relief	SD	SE	t	P (n = 10)
	B.T.	A.T.	Diff.					
Anxiety Rating Scale	15.100	5.100	10.000	66.22↓	8.589	2.716	t = 3.682	P = 0.005
Depression Rating Scale	13.700	4.300	9.400	68.61↓	5.358	1.694	t = 5.548	P ≤ 0.001
PGI Memory Scale	29.400	43.400	-14.000	47.62↑	4.807	1.520	t = -9.209	P ≤ 0.001

Effect on Objective Parameters: In this study, Group B shows highly Significant results in Depression Rating Scale (P = <0.001) and PGI memory Scale (P = <0.001). While, Anxiety Rating Scale (P = 0.016) shows significant result.

parameters were having significant increase or decrease

Effect on Hematological and Biochemical Parameters A: Above data shows that S. HDL (P = 0.010) was increased significantly, whereas, S. Creatinine (P = 0.038) and Uric acid (P = 0.041) were decreased significantly. In lipid profile S. Triglyceride (P = 0.186) was found decreased though it is insignificant. While, no significant increase was found in S. LDL and S. VLDL value shows decrease but not significant. Other parameters were having insignificant increase or decrease statistically.

DISCUSSION: Memory is the complex form of brain function^{xv}. The effects of normal aging on memory^{xvi} may result from the subtly changing environment within the brain^{xvii}. Person who follows the system or rules regularly has no difficulty in daily work due to practice e.g. trained army man, housewives etc. This is the normal condition, but whenever a person will starts forgetting the routine, decay in memory was observed e.g. misplacing things, forgotten routines etc. Memory is depended on data entry i.e. grasping and grasping is depends upon interest, association, concentration or attention and repetition. Due to increased Vata one cannot be able to focus or concentrate. If concentration is not proper one cannot be able to percept. Then in consequence to that retention is not possible. Once

Grasping and retention declines, it affects memory too. But, in case of advancing age, the brain seems to lose cells^{xviii}. Some research shows that degeneration of all tissues starts from the birth and the percentage may vary. The brain weight began to diminish at 20 years of age^{xix}. Brain loses 0.80 % tissue per year, if it is calculated at the age of 40 yrs almost 16 % tissue get loss by brain. It is big in number which can be reflecting significant function loss. It can be considered as a reason that people experience some impairment in memory^{xx}.

Ghrita itself promotes memory^{xxi}. Properties of cow *Ghrita* are unctuous and heavy^{xxii}. It helps for the pacification of *Vata* in the body^{xxiii}, which leads to reduces anxiety. The data shows significant effect on anxiety too. Once person get depress, unable to retain which results difficulty in recalling the things^{xxiv}. *Acharya Charak* narrated *Ghrita* helps in retaining^{xxv}. Highly significant and significant results on depression were observed in group B and A respectively.

The study drugs were effective to reduce from anxiety and depression, which results in improvement in the process of making memory^{xxvi}. The result supports, PGI memory scale shows highly significant and significant results on group B and group A respectively.

It is misbelief that, *Ghrita* increases fat component in the body^{xxvii}. But this study shows no significant changes^{xxviii} in bad fat molecules^{xxix}.

Decline in performing any work may because of improper knowledge on the subject or some physical disability. And knowledge is based on grasping capacity, retention and recalling power.

CONCLUSION:

This study shows significant results for reducing conditions like anxiety and depression. As the person become free from these conditions, will be able to grasp and retain. Once grasping or retaining becomes perfect, it helps in recalling properly. As a result of this correction in the mechanism it affects on memory. In this study, markedly improvement was observed with the intervention.

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