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Research Article

ANALYTICAL STUDIES ON *JARAJANYA VISHADA* (GERIATRIC DEPRESSION) IN LIGHT OF *CHARAKA SAMHITA* AND ITS MANAGEMENT WITH *ASHWAGANDHA* ROOT

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ABSTRACT

The state of *Vishada* (depression) which is seen during *Jeernavastha* (old age) can be termed as '*Jarajanya Vishada*' in accordance with geriatric depression which is now days considered as world-wide phenomenon. *Vata Dosha* which becomes dominant during old age is also responsible for causation of *Vishada*. Geriatric depression is generally associated with higher medical morbidity and mortality, greater disability along with more neuro-psychological and neuro-radiological abnormalities which is also seen during *Jeernavastha.* **Aims and Objectives:** To evaluate the concept of *Jarajanya Vishada* in line of geriatric depression along with to evaluate the efficacy of the stipulated drug i.e., root of *Ashwagandha* (*Withania somnifera* Linn.) to combat the same. **Materials and Methods:** In selected 24 subjects of *Jarajanya Vishada* (geriatric depression) having inclusion and exclusion criteria based on Geriatric Depression Scale (GDS), selected therapeutic regimen (1. *Shirodhara* by warm decoction of root of *Ashwagandha* + 2. *Avapida Nasya* by fresh juice of *Ashwagandha* root along with 3. Oral intake of fresh juice of root of *Ashwagandha*) was administered for 30 consecutive days. **Results:** The result of the study revealed that, the stipulated therapeutic regimen with *Ashwagandha* has moderate efficacy (25% - 50%) on maximum cases of mild depression and mild efficacy (<25%) on maximum cases of major depression. **Conclusion:** The state of *Jarajanya Vishada* should be evaluated on the basis of subjective experience by the individuals suffering from it with the help of Geriatric Depression Scale (GDS). Cases of geriatric depression should be treated with drugs having *Vata Shamaka and Jara Nashaka* properties, like root of *Ashwagandha*.

INTRODUCTION

According to Ayurveda, *Sattva* (mind), *Atma* (soul) and *Sharira* (body) - these are like a tripod; the world is sustained by their combination; they constitute the substratum for everything[1]. Conceptually *Atma* or soul does not suffer from changes and remains as an eternal constant throughout our life span [2]. Physical body undergoes several changes- both morphologically and functionally from time to time.

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All the major Ayurvedic compendiums classifies Ayu (the whole span of life) into three distinct phases, which *Acharya Charaka* refers as - *Bala Avastha* (childhood, from birth to 30th year of age), *Madhya Avastha* (middle age, from 30th year of age to 60th year of age) and *Jirna Avastha* (old age, 60th year of age onwards)[3]. The term *Jara* has been used by *Acharya Charaka* to denote the changes occurs during old age, so the term *Jara* can be correlated with geriatric changes or senility. Conceptually it has been said that, every phase of life is regulated by function of one principal *Dosha*, *Vata* being the dominant *Dosha* during the old age. Body and mind has a very intimate dependence, effecting each other by altered state of each one them. Although *Acharya Charaka* has elaborately discussed various metaphysical, physiological and functional aspect of human mind as well as the various psychological ailments like

Unmada, Apasmara, Atatwabhinivesha etc. which are occurred due to affliction of human mind by several factors, he has not dealt with the concept of depression with great importance or elaborately. An estimated 3.8% of the population experience depression, including 5% of adults (4% among men and 6% among women), and 5.7% of adults older than 60 years. Approximately 280 million people in the world have depression [4].

The state of depression is called *Vishada* as per Ayurvedic lexicon. *Acharya Charaka* has used this term in two distinct places - once while discussing the various *Nanatmaja Vyadhi* in *Charaka Samhita, Sutrasthana*, 20th chapter under the description of 80 types of *Vataja Nanatmaja Vyadhi*[5] and again once while discussing various examples of important drugs, actions and factors in *Charaka Samhita, Sutrasthana,* 25th chapter where he has commented that, *Vishada* is the principal cause for aggravation of diseases [6]. Depending on these two inputs we can conceptually draw the causation and effect of *Vishada* or depression in old age based on the theory of *Karya Karana Vada*, more specifically by theory of *Satkarya Vada*. The principle of *Sat Karya Vada* has been accepted by Ayurveda according to which, without the cause there is no action and the action remains inherited within the cause. So, the state of *Vishada* (depression) which is clinically found in majority of the individuals during their *Jirnavastha* (old age) can be interpreted based on the theory of *Satkarya Vada. Acharya Charaka* has described various inevitable physiological and mental changes occurred during the state of *Jara* or senility, many of which can be compared with clinical features of depression [7].

Although our present topic '*Jarajanya Vishada*' has not been mentioned by *Acharya Charaka* as a separate diseased condition, the state of depression related with old age (commonly termed as 'Geriatric Depression') is a global phenomenon. A recent systematic review and meta-analysis found that the overall prevalence of depression among the included older adults was 28.4% globally [8]. Another study has found that, the overall prevalence of depression was 35.1% in geriatric people included in that study [9]. In context of increased medical disease burden or neurologic complications, a large number of older adults often develop depression for the first time in their lives. Sometimes, when the depression first appears in older adults, the neurologic disorders are not clinically evident [10]. In contrast to this, most of the studies showed that, geriatric depression is generally more associated with different medical morbidity and mortality, greater disability and neurological abnormalities in comparison with early life depression [11]. Late-life depression is often associated with executive dysfunction, a neuropsychological expression of frontal system impairment, with a clinical presentation of depression resembling medial frontal lobe syndromes[12]. In geriatric depression executive tasks of response inhibition and sustained effort are more frequently impaired in comparison to cognitive impairment in all age groups [13]. With the gradual improvement of geriatric depression, such executive dysfunction gets subsided but tends to persist after remission of depression[14]. Elderly subjects with executive dysfunction more tends to suffer from reduction in enthusiasm in different activities, more advanced psychomotor dysfunction and poor response to therapeutics having anti-depressant activity [15]. As compared with early onset depression without any vascular risk factors, subjects having late onset depression with greater vascular dysfunction show more disability with less sense of guilt, mood alteration, poorer insight and impaired frontal lobe functions [16]. Family history of depression is less common in patients with late-onset depression than in elderly patients with early onset recurrent depression and less common in "vascular depression" than in non-vascular depression[17]. "Vascular depression" is a hypothesis which postulates that cerebrovascular disease predisposes, precipitates, and perpetuates a late life depression syndrome [18]. Thus in comparison to early onset depression, geriatric depression is usually associated with many morphological, biochemical and functional abnormalities of brain with central nervous system and cardio vascular system. So, to study this now global phenomenon with our Ayurvedic principles and to chalk out its possible management, we have to study geriatric depression in line of *Vishada* resulting from *Jara* depending upon the theory of *Satkarya Vada*.

AIMS AND OBJECTIVES

In the above context, the present clinical study was carried out keeping the following aims and objectives:

1. To evaluate the concept of *Vishada* as a separate diseased state of mind in line of major depression.
2. To evaluate the concept of *Jarajanya Vishada* in line of geriatric depression by applying the theory of *Satkarya Vada*.
3. To evaluate the efficacy of stipulated therapeutic procedure (1. *Shirodhara* by warm decoction of root of *Ashwagandha* + 2. *Avapida Nasya* by fresh juice of *Ashwagandha* root along with 3. Oral intake of fresh juice of root of *Ashwagandha*) to combat *Jarajanya Vishada* with special reference to geriatric depression.

MATERIALS AND METHODS

The conceptual understanding regarding *Jarajanya Vishada* was verified through a clinical study in the individuals suffering from geriatric depression. Assessment of geriatric depression was done on the basis of geriatric depression scale (GDS) (Table no. 1).

The study has been also carried out to evaluate the clinical efficacy of the stipulated therapeutic procedure (1.*Shirodhara* by warm decoction of root of *Ashwagandha* + 2.*Avapida Nasya* by fresh juice of *Ashwagandha* root along with 3.Oral intake of fresh juice of root of *Ashwagandha*) to combat *Jarajanya Vishada* with special reference to geriatric depression. The therapeutic procedure was applied along with intake of the stipulated medicine in the subjects included in the study to observe the improvement in geriatric depression scale (GDS). Improvement of the patient was assessed through the geriatric depression scale GDS) before and after treatment.

Selection of the Subjects

Initially 30 subjects having more than sixty years of age were randomly selected based on majority of the inclusion criteria from Out Patient Department of Raghunath Ayurved Mahavidyalay and Hospital, Contai, West Bengal, irrespective of their sex, occupation and religion. Thereafter they were assessed on the basis of Geriatric Depression Scale (GDS) (Table no.1) for their stage of depression. According to the standard cut point of GDS, 6 subjects were found to have no depression (scoring below 9). So, these 6 subjects were excluded from the study and the study was conducted on the rest of 24 subjects who scored more than 9 point in GDS. Prior to carry out the study the respective patient consent form was duly signed by the subjects.

Inclusion Criteria

a) Subjects having more than 60 years of age, irrespective of their occupation, sex and religion.
b) Subjects who has scored more than 9 points in Geriatric Depression Scale.
c) Subjects who are willing to include themselves into the study.
d) Subject who are not suffering from any psychosis and able to express their feelings properly.

Exclusion Criteria

a) Subjects below 60 years of age.
b) Subjects who has scored below 9 points in Geriatric Depression Scale.
c) Subjects who are not willing to include themselves into the study.
d) Subject who are suffering from any type of psychosis.
e) Subject who are under any other therapeutic regimen and is taking other medicines for any of the systemic ailments.

Subjective Criteria

Subjective criteria were selected based on the questionnaires set in Geriatric Depression Scale. Based on the responses about how the subject has felt over the last one week before asking those 30 questions, which would be expressed in terms of 'YES' or 'NO', each answer which corroborates with subjective criteria of depression has been given 1 point. The Geriatric Depression Scale has been shown in the Table no.1 below:

Table 1: Geriatric Depression Scale (Long Form) [19]

No.	Questions	Answer	Score
01.	Are you basically satisfied with your life?	YES / NO	0 / 1
02.	Have you dropped many of your activities and interests?	YES / NO	1 / 0
03.	Do you feel that your life is empty?	YES / NO	1 / 0
04.	Do you often get bored?	YES / NO	1 / 0
05.	Are you hopeful about future?	YES / NO	0 / 1
06.	Are you bothered by thoughts you can't get out of your head?	YES / NO	1 / 0
07.	Are you in good spirits most of the time?	YES / NO	0 / 1
08.	Are you afraid that something bad is going to happen with you?	YES / NO	1 / 0
09.	Do you feel happy most of the time?	YES / NO	0 / 1
10.	Do you often feel helpless?	YES / NO	1 / 0
11.	Do you often get restless and fidgety?	YES / NO	1 / 0
12.	Do you prefer to stay at home, rather than going out and doing new things?	YES / NO	1 / 0
13.	Do you frequently worry about the future?	YES / NO	1 / 0
14.	Do you feel you have more problems with memory than most?	YES / NO	1 / 0
15.	Do you think it is wonderful to be alive now?	YES / NO	0 / 1
16.	Do you often feel downhearted and blue?	YES / NO	1 / 0
17.	Do you feel pretty worthless the way you are now?	YES / NO	1 / 0

18.	Do you worry a lot about the past?	YES / NO	1 / 0
19.	Do you find life very exciting?	YES / NO	0 / 1
20.	Is it hard for you to get started on a new project?	YES / NO	1/ 0
21.	Do you feel full of energy?	YES / NO	0 / 1
22.	Do you feel that your situation is hopeless?	YES / NO	1 / 0
23.	Do you think that most people are better off than you are?	YES / NO	1 / 0
24.	Do you frequently get upset over little things?	YES / NO	1 / 0
25.	Do you frequently feel like crying?	YES / NO	1 / 0
26.	Do you have trouble concentrating?	YES / NO	1 / 0
27.	Do you enjoy getting up in the morning?	YES / NO	0 / 1
28.	Do you prefer to avoid social gathering?	YES / NO	1 / 0
29.	Is it easy for you to make decision?	YES / NO	0 / 1
30.	Is your mind as clear as it used to be?	YES / NO	0 / 1
	Total Score		

Objective Criteria

No objective criteria were selected as the entire study had been clinically conducted based on Geriatric Depression Scale.

Adoption of Drug

Ashwagandha (*Withania somnifera* Linn.) is a well-known drug in Ayurvedic literature useful in vitiation in *Vata Dosha* and combating *Jara* (Figure no. 1 & 2). It was procured from local market and surrounding premises. This stipulated drug was administered as both external medication as well as internal medication as stated below:

No.	Therapeutic Regimen	Frequency	Duration
01.	*Shirodhara* (continuous flow of liquid poured on forehead of any person) was given by warm decoction of *Ashwagandha* root for one *Muhurta* (48 minutes).	Once daily at morning (Between 9.00 a.m. to 10.00 a.m.)	30 days
02.	*Avapida Nasya* (administration of juice in form of nasal drop) with fresh juice of raw root of *Ashwagandha* at a dose of two drops in each nostrils.	Once daily at morning after *Shirodhara*	30 days
03.	Oral intake of fresh juice of raw root of *Ashwagandha* mixed with honey in a dose of 30ml.	Twice daily-once at early morning (6.00 a.m.) in empty stomach and again at afternoon (4.00 p.m.)	30 days

Figure 1: *Ashwagandha* (*Withania somnifera* Linn.) Whole Plant

Figure 2: *Ashwagandha* (*Withania somnifera* Linn.) Root

Counseling and Regimen

During the study period each one of the subject was personally counselled twice a week for uplifting of their moral strength. During this study period, they were advised to take balanced healthy diet, milk, seasonal vegetables and fruits as much as possible along with brisk walking at early morning for minimum half an hour. They were also advised to avoid *Vata* vitiating diets along with any unfavourable stressful condition at home or working place as much as possible along with spending a considerable time performing their own works of interests like worshiping, performing religious activities, gardening, playing with kids etc. The family members of each subject were also duly addressed to properly cooperate with the subjects to follow all the instructions.

Study Protocol

A. Duration of Study: The duration of study was 30 days for each subject. The entire study involving all the subjects was completed within a span of six months.

B. Study Sample: The complete study was done on total 24 subjects.

C. Assessment Criteria: Based on the points given according to the responses in form of 'YES' or 'NO' in Geriatric Depression Scale (GDS), assessment was done on the basis of total points aggregated after 30 questions. Each subject had to undergo through these 30 questions in GDS twice - once before commencement of the study and again after completion of the study. Based on the standard Cut-off points, the total aggregated points were interpreted in following manner (Table no. 2):

Table 2: Cut-off points for interpretation of level of Depression in Geriatric Depression Scale [20]

Total aggregated points in GDS	Interpretation
0 - 9	Normal/No depression
10 - 19	Mild depression
20 - 30	Severe depression

To assess the efficacy of the stipulated drug in form of external and internal medication, the difference in terms of regression in total aggregated points in GDS, recorded before and after study, was calculated and put on percentile to show the level of improvement. On the basis of calculated percentile, the following interpretation of improvement was done as shown in Table no. 3.

Table 3: Interpretation of level of improvement on the basis of total aggregated points in GDS, recorded before and after study

Percentile of Improvement	Interpretation
< 25%	Mild Improvement
25% - 50%	Moderate Improvement
50% - 75%	Significant Improvement
> 75%	Highly Significant Improvement

D. Follow up of Subjects: All the subjects having *Jarajanya Vishada* were reviewed after 30 days from the date of administration of first dose. Any special information regarding the general health of any subject was recorded accordingly.

OBSERVATIONS AND RESULTS

Distribution of scoring in GDS among 24 subjects having *Jarajanya Vishada* (geriatric depression) shows that, 19 subjects (79.16%) were suffering from mild depression, scoring between 10 - 19 points and 5 subjects (20.83%) were suffering from severe depression, scoring between 20 - 30 points as shown in Table no. 4.

Table 4: Showing the distribution of level of depression among 24 subjects having *Jarajanya Vishada* (geriatric depression)

Score	Number of subjects	Percentile of subjects	Interpretation
10 -19	19	79.16%	Mild Depression
20 - 30	05	20.83%	Severe Depression

Distribution of scoring in GDS among the same 24 subjects on the basis of their sex (male and female) shows that, among overall 19 subjects (79.16%) who were suffering from mild depression, 13 subjects (68.43%) were male and the rest 6 subjects (31.57%) were female. Again in the overall 5 subjects (20.83%) who were suffering from severe depression, 3 subjects (60.00%) were found to be male and 2 subjects (40.00%) were found to be female. The distribution of subjects on the basis of their sex has been shown in Table no. 5.

Table 5: Showing the distribution of 24 subjects having *Jarajanya Vishada* (geriatric depression) on the basis of their sex

Distribution of 19 subjects having Mild Depression		
Sex	**Number of subjects**	**Percentile of subjects**
Male	13	68.43%
Female	06	31.57%
Distribution of 05 subjects having Severe Depression		
Sex	**Number of subjects**	**Percentile of subjects**
Male	03	60.00%
Female	02	40.00%

Statistical analysis of total aggregated score in GDS among 24 subjects before and after 30 days of treatment with root of *Ashwagandha* shows that, the stipulated drug has moderate efficacy in maximum subjects having mild depression and mild efficacy among maximum subjects having severe depression. The total analysis of therapeutic effect of *Ashwagandha* root in 24 cases of *Jarajanya Vishada* (geriatric depression) has been shown in Table no. 6 & Table no. 7.

Table 6: Statistical analysis of aggregated points in GDS among 24 subjects of *Jarajanya Vishada* (geriatric depression) before and after 30 days of treatment

Subject	**Sex**	**GDS Score**		**Improvement in Percentile**	**Interpretation**
		BT	**AT**		
S1	M	18	12	33.33%	Moderate Improvement
S2	M	17	11	35.29%	Moderate Improvement
S3	M	17	10	41. 17%	Moderate Improvement
S4	F	16	11	31.25%	Moderate Improvement
S5	F	18	12	33.33%	Moderate Improvement
S6	M	19	10	47.36%	Moderate Improvement
S7	M	15	13	13.33%	Mild Improvement
S8	M	17	11	35.29%	Moderate Improvement
S9	F	16	12	25.00%	Moderate Improvement
S10	M	17	10	41.17%	Moderate Improvement
S11	M	16	07	56.25%	Significant Improvement
S12	M	15	11	26.66%	Moderate Improvement
S13	M	15	10	33.33%	Moderate Improvement
S14	F	14	11	21.42%	Mild Improvement
S15	F	19	10	47.36%	Moderate Improvement
S16	M	15	07	53.33%	Significant Improvement
S17	M	19	10	47.36%	Moderate Improvement
S18	F	17	11	35.29%	Moderate Improvement
S19	M	18	13	27.77%	Moderate Improvement
S20	M	25	17	32.00%	Moderate Improvement
S21	M	28	18	35.71%	Moderate Improvement
S22	M	23	19	17.39%	Mild Improvement
S23	F	27	21	22.22%	Mild Improvement
S24	F	22	17	22.72%	Mild Improvement

Table 7: Overall improvement percentage in 24 subjects of geriatric depression after 30 days of treatment

Level of Improvement	**Number of Subjects**	**Percentage**
19 Subjects having Mild Depression		
Mild Improvement	02	10.53%
Moderate Improvement	15	78.94%
Significant Improvement	02	10.53%

Highly Significant Improvement	00	00%
05 Subjects having Severe Depression		
Mild Improvement	03	60.00%
Moderate Improvement	02	40.00%
Significant Improvement	00	00%
Highly Significant Improvement	00	00%

DISCUSSIONS

According to WHO, mental health is defined as a "state of subjective wellbeing, self-efficacy, autonomy, competence, intergenerational dependence and self-actualization of individual capabilities and emotional fitness, when dealt with the society"[21]. When an individual's mental health is disrupted due to some reason, it may result in a mental illness, which will eventually proceed into a state that interferes with day to day life, ultimately regressing the quality of life. In modern psychiatry, mental illness has been broadly categorized under two sections - neurosis and psychosis. Although neurosis and psychosis completely differ from each other in terms of pathology, symptoms, management and prognosis; however these two terms are often used interchangeably due to many common features they share. Neurosis refers to a constant struggle between an individual's personality and his patterns of behaviour in a stressful condition, often associated with physical and mental disturbances [22]. Psychosis is defined as a major personality disorder which disrupts one's emotional and mental aspect of life [23]. The key difference between neurosis and psychosis is, in neurosis patients know that they have been effected by a certain illness i.e., their mind is present whereas in psychosis patients often lose their touch with the reality with an absolute distortion of it i.e., their mind becomes lost [24]. The commonly found neurosis are anxiety neurosis, depression, eating disorders (anorexia nervosa, bulimia nervosa) etc. whereas the commonly found psychosis are schizophrenia, bipolar disorders, etc. Although Ayurveda has elaborately described various types of psychosis like *Unmada* (comparable with schizophrenia, bipolar disorder, manic disorders), *Apasmara* (comparable with hysteria) etc but unfortunately none of the primary compendiums of Ayurveda including *Charaka Samhita* has given much emphasis of various types of neurosis like *Chinta* (anxiety neurosis), *Vishada* (depression) etc- although both the categories of psychiatric diseases arise due to vitiation of *Manovaha Srotas* and often persistent neurosis leads to occurrence of psychosis. *Vishada* is such a type of neurosis which has been mentioned twice in *Charaka Samhita* by its name only - once as a type of *Vataja Nanatmaja Vyadhi* (the diseases which arise due to exclusively vitiation of *Vata Dosha*) [25] - which indicates *Acharya Charaka*'s basic concept about its pathogenesis and again he has mentioned *Vishada* as the principal cause for aggravation of diseases - which indicates its effect on various somatic diseases. Although the clinical features of *Vishada* (depression) has not been mentioned in *Charaka Samhita*, but if we analyse the various *Purva Rupa* (prodromal features) mentioned in relation with the disease *Unmada* (schizophrenia mainly) with the common presenting features of depression - we will find many similarities as shown in the Table no. 8. These similarities give us an overall conceptual understanding about the clinical features of *Vishada* in line of Ayurvedic concept. Again this finding also supports the view that, persistent neurosis often leads to occurrence of psychosis in later phase.

Table 8: Comparison between *Purva Rupa* (prodromal features) of *Unmada* and clinical features of depression [26,27]

No.	Features	*Purva Rupa* of *Unmada*	Features of depression
01.	*Shirashunyata* (Feeling of void in head)	++	++
02.	*Chakshurokulata* (Restlessness of eyes)	++	++
03.	*Swankarnayoh* (tinnitus)	++	++
04.	*Uchwasadhikya* (Hurried respiration)	++	++
05.	*Aannanabhilasha* (Loss of appetite)	++	++
06.	*Arochaka* (Anorexia)	++	++
07.	*Avipaka* (Indigestion)	++	++
08.	*Hrudgraha* (Chest tightness)	++	++
09.	*Satata Lomharsha* (continuous horripilation)	++	++
10.	*Udardittatwam* (Pain in upper half of body)	++	++
11.	*Ardita Krutikaran* (Abnormal facial expressions)	++	++
12.	*Swapna Viparyaya* (unstable dreams)	++	++

The term '*Jarajanya Vishada'* has been conceptualized in line of geriatric depression (often termed as 'depression in older adults' or 'late life depression') although this term has not been mentioned in any of the principal compendiums of Ayurveda. Late-life depression frequently differs from early-life depression in its clinical characteristics, particularly if it is late in onset or accompanied by signs of executive dysfunction or vascular disease. Geriatric depression is often associated with executive dysfunction, a neuropsychological expression of frontal system impairment, with a clinical presentation of depression resembling medial frontal lobe syndromes [28]. Depression affects cognitive function in all age groups, but the executive tasks of response inhibition and sustained effort are more frequently impaired in geriatric depression. Executive dysfunction generally subsides as depression improves, but tends to persist after remission of depression [29]. When depressed elderly patients have executive dysfunction, they are more likely to have reduced interest in activities, more profound psychomotor retardation and poor and unstable response to anti-depressants [30].

Assessment of geriatric depression is usually made using the Geriatric Depression Scale (GDS) worldwide as in this study. GDS deals with analysing the presenting clinical features depending on the responses of older subject against the standard questionnaire. Conceptually geriatric depression i.e., *Jarajanya Vishada* occurs due to two principal factors - *Jara* (senility) and vitiation of *Vata Dosha*. Both these conditions afflict the *Manovaha Srotas* which leads to alteration of functions of mind resulting into manifestation of state of *Vishada* during *Jeernavastha* of life - thus termed as *Jarajanya Vishada*. This thought can be validated by the conceptual analysis of multiple facts as available in *Charaka Samhita* following the principles of *Satkarya Vada*. *Jeernavastha* (old age/late life) comes as natural phenomenon as part of ageing process in human life, that's why it has been termed as *Swabhavika Vyadhi* (a natural state of misery) [31]. The changes occur during *Jeernavastha* have been termed as *Jara*. *Acharya Charaka* has given a vivid description about the physiological and clinical changes occur due to *Jara* in *Rasayanadhyaya* of *Chikitsasthana* [32]. Again, as he has mentioned *Vishada* as *Vataja Nanatmaja Vyadhi* so we can conceptually say that, the alterations of human mind along with other functional changes which occur due to vitiation of *Vata* as described in *Vatakalkaliya Adhyaya* of *Sutrasthana* [33] must be seen in *Vishada*. And again, as it has been generally considered that, *Vata Dosha* gets naturally dominant during *Jeernavastha* due to *Dhatu Kshaya*, so we can draw a gross conclusion that, the state of *Vishada* which occurs during *Jeernavastha* must be contributed by four factors: 1. Natural dominance of *Vata Dosha* during *Jeernavastha* due to depletion of different *Dhatus* 2. The central pathology of *Vishada* is contributed by vitiation of *Vata Dosha* only 3. Effect of vitiated *Vata Dosha* on human mind along with body and 4. Effect of *Jara* (senility/ageing) on psycho-somatic functions of human body - which should be considered as one of the prime cause for vitiation of *Vata Dosha* during *Jeernavastha*. This basic understanding about the *Jarajanya Vishada* can be validated by a conceptual explanation of major symptoms found in geriatric depression in light of above four factors as described below:

1. **Feeling of Downheartedness**

   This is the most common feature found in geriatric depression which manifested as a state of overall unhappiness and sense of dissatisfaction. When vitiated *Vata Dosha* in old age afflicts mind, it results into '*Mano Vyaharshayati'* i.e., devoid mind of any kind of happiness [34].

2. **Impairment of Sense Organs**

   Persons suffering from geriatric depression frequently complains about impairment of different sensory organs like tastelessness, vision impairment, tinnitus, tactile hallucination or anosmia. These features are contributed by the function of vitiated *Vata Dosha* in old age as it diminishes the functions of all types of sensory organs as described as *'Sarva Inriyanyupahanti'* [35].

3. **Feeling of sorrow, insecurity and poverty**

   As all the majority individuals during old age more or less suffer from a feeling of poverty at heart, insecurity or overall inferior complexity - all these features exaggerated during the state of clinical depression in old age. These kind of negative feelings lead to depression and due to depression there is exaggeration in such feelings. When vitiated *Vata Dosha* effects human mind it leads to different negative feelings like *Bhaya* (insecurity), *Shoka* (sorrow), *Dainya* (poverty) etc. [36].

4. **Muttering**

   Muttering is considered as "to speak in low, indistinct tones without much movement of the lips, as in complaining or in speaking to oneself". It is one of the most common symptoms found in geriatric depression. Old age persons often found to talking indistinctly and privately as to one own self in low, monotonous tone. This symptom can be explained in terms of effect of vitiated *Vata Dosha* as described like *Pralapa*[37]. *Vata Dosha* is the principle factor for regulation of speech. When it gets vitiated there is alteration of speech either in terms of mute or muttering.

5. **Suicidal Tendency**

   Depression is considered as one of the leading cause of suicide worldwide. Geriatric depression is no

exception to it. Studies have found that, there is a considerable tendency of suicide presents in patients of geriatric depression. Different questionnaires in GDS also help us to monitor the growing tendency of suicide in geriatric patients. This suicidal tendency can also be explained in terms of effect of vitiated *Vata Dosha* in human mind and body as described in Charaka Samhita as '*Pranamscha Uparunaddhi*' i.e., vitiated *Vata Dosha* takes away one's life [38].

6. Association of Executive Dysfunction and Brain Abnormalities

One of the distinct features of geriatric depression from early life depression is its association with different executive dysfunctions like cardio-vascular dysfunction, renal incompetence, masculo-skeletal impairments etc. along with anatomical and functional abnormalities of higher centre i.e., brain. These dysfunction and abnormalities act as both predisposing and exaggerating factor in case of geriatric depression. Acharya Charaka has described several such physiological and neurological dysfunctions along with disabilities under the description of Jara (senility) like: *Vimuchyante Sandhya* (looseness of joints), *Na Sandhayate Asthishu Majja* (depletion of bone and bone marrow within joints), *Kshayamupatya Oja* (depletion of immunity or vitality), *Asamartha Chestanam Sharira Manasa* (impaired psycho somatic functions), *Nastasmriti* (dementia), *Nasta Buddhi* (impairment of intellect i.e. impairment of higher centre functioning) etc. [39]. These effects of *Jara* on human body and mind as described in Charaka Samhita should be studied in terms of association of different dysfunction and disabilities associated with geriatric depression.

The present study has found that, prevalence of geriatric depression is more common in male than female as described in table no. 5. A larger sample size with a large community will give us more accurate data about this. The study has also found that, the prevalence of mild depression is more than severe depression as described in table no. 4. This study has also found that, the response with therapeutic treatment in line of *Jarajanya Vishada* is more encouraging in cases of mild depression than in cases of severe depression as showed in table no. 6. Analysing the properties of stipulated drug i.e. root of *Ashwagandha* (*Withania somnifera* Linn.) shows that, it contains *Tikta, Katu, Madhura Rasa, Laghu, Snigdha Guna, Ushna Virya* and *Madhura Vipaka* [40]. It is a well-known drug for pacification of *Vata Dosha*, along with it acts as *Valya* (tonic) and *Rasayana* (rejuvenating drug)[41]. Acharya Charaka has mentioned this drug under *Balya Mahakashaya* (group of drugs act as tonic) and *Brimhaniya Mahakashaya* (group of drugs act as nourishing substance)[42]. According to the theory of *Satkarya Vada* it can be propounded that, by virtue of its *Madhura Vipaka* and *Ushna Virya* it alleviates *Vata Dosha*. For its *Madhura Rasa, Snigdha Guna, Madhura Vipaka* and *Ushna Virya* it acts as *Brimhaniya, Balya* and *Rasayan*. Thus it can be said that, *Ashwagandha* combat *Jarajanya Vishada* in two ways - at first it pacifies the vitiated *Vata Dosha* and secondly it also helps in correction of *Jara Avastha* by virtue of its *Brimhana, Balaya* and *Rasayana Guna* (as shown in the Figure no. 3). This drug has been administered in three ways - orally as fresh juice, as *Avapida Nasya* (nasal drop) and *Shirodhara* by its warm decoction. Nasal orifice has been considered as the gateway to internal organs within head by Acharya Charaka. *Shirodhara* is also considered as one of the principal therapeutic management in mental and neurological diseases. Geriatric depression being the disease which effects normal functioning of brain, these two therapies have been chosen to administer the stipulated drug. *Ashwagandha* administered as the combination of all these three methods found to be moderately effective in cases of mild geriatric depression and mild effective in cases of severe geriatric depression. Such findings suggest us that, the combination of various other drugs with similar *Vata Shamaka, Balya, Rasyana* properties with increased duration of administration will give more significant results.

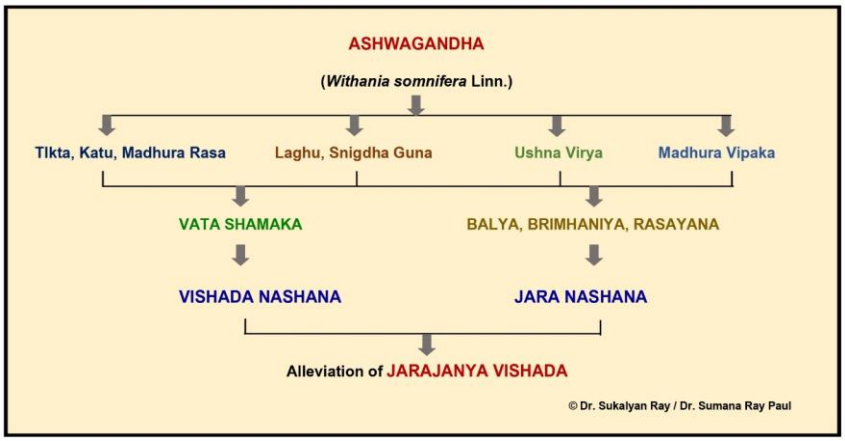

Figure 3: Mechanism of action of *Ashwagandha* on *Jarajanya Vishada*

CONCLUSION

The state of *Vishada* (depression) of human mind is experienced by all individuals in this world at some point of their life. But when this state of depression hampers day to day activity, personality development along with other cognitive and somatic impairment it should be considered as major depression and it is subjected to treat. *Jara* (senility) is the final decaying state of human body seen in last third of human life. *Vishada* is caused by vitiation of *Vata Dosha* which is dominant during old age. Although *Acharya Charaka* has not described *Jarajanya Vishada*, this state can be compared with geriatric depression. Apart from cognitive impairment and mood alteration, this type of depression is often associated with various functional dysfunctions along with chronic diseases. The state of geriatric depression should be evaluated on the basis of subjective experience by the individuals suffering from it with the help of Geriatric Depression Scale (GDS). Managing geriatric depression with drugs having *Vata Shamaka, Balya, Brimhana, Rasayana* properties like *Ashwagandha* has mild to moderate effectiveness with a minimum duration of treatment. This study has analysed geriatric depression in the line of *Jarajanya Vishada* and has found that it can be treated with the drugs which are effective for alleviation of *Jara* (senility) and *Vishada* (depression) simultaneously.

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