

ROLE OF MATRAVASTI AS RASAYANA IN JARAJANYA VIKAR (Problems of Ageing)



Rajasthan Ayurved University, Jodhpur

Thesis submitted for the Degree
of
Doctor of Philosophy (Ph.D) Ayurveda
(Ayurveda Vidyavaridhi)

by

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Autonomous organization under Dept. of AYUSH

Ministry of Health & Family welfare, Govt. of India

Enrolment No. RAU/09/034

Regd. No. RAU / Aca /213 / 09 -10

2011

Certificate

This is to certify that the study entitled “**Role of Matravasti as Rasayana in Jarajanya Vikar (Problems of Ageing)**” is the bonafide record of research work conducted by **Dr.Sathyanarayana Dornala** under my direct supervision and guidance as a part of fulfillment for the award of Doctor of Philosophy (Ph.D) Ayurveda.

The candidate has put in sincere and laborious effort after making an intense study coupled with theoretical and practical observations. The candidate has tried to critically analyze various *Ayurvedic* references in this regard.

The candidate has fulfilled all the requirements of ordinances laid down in the prospectus of University for the award of *Doctor of Philosophy (Ph.D.) Ayurveda*.

I am completely satisfied with the candidate’s work and recommend this thesis to be forwarded to adjudicators for adjudication for the award of Doctor of Philosophy (Ph.D) in Ayurveda of Rajasthan Ayurveda University Jodhpur.

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6.1 SUMMARY

Ayurveda itself is seen to have been evolved to ease human beings from *Jara*. Inclusion of *Jara chikitsa* (*Geriatrictics*) as one among the *Ashtanga ayurveda* during those good olden days implies the foresight of *acharyas* on its importance. WHO declared the calendar year 1999 as the International Year of Older People (IYOP), since then the problems of ageing people got the worldwide focus and health wise momentum. Now at this time, the whole world is showing renewed interest in the aging process and aged people. In first 50 yrs of 21st century old age dependency ratio is expected to double in more developed region and triple in less developed region, thus the aged people are going to be a big problem for the society. It is the best time to explore the possibilities from *Ayurveda*, which can raise the hope of the silver population and improve their lifespan.

The following are the main points of interest drawn from this study are -

- The cognate of the Greek “*Geras*” is the Sanskrit “*Jara*” both of which means old age. According to *Ayurveda*, the *Jara* (ageing) is a natural phenomenon like hunger, thirst and sleep. *Sushruta* mentioned a group of naturally occurring diseases named *Swabhavabala roga*, which includes *Kshut* (hunger), *pipasa* (thirst), *nidra* (sleep), *jara* (old age) and *mrityu* (death).
- *Jara*, being a *Swabhavabala pravritta roga*, occurs due to *vyadhihetu* called *parinama/ kala*. “*Swabhavo nispratikriya*”, *jara* being a natural phenomenon of *parinama* is unavoidable i.e., *jara* is an inescapable part of life. This dictum of *Charaka* should be understood in the sense that ‘*swabhava*’ cannot be avoided altogether however, onset and manifestations of ageing can be delayed to certain extent i.e., *manda jara* (a term specifically used by *Charaka* while enumerating the benefits of *sneha chikitsa*).

- “**Longer lives are not necessarily healthier lives**” since the likelihood of disability increases with age. In *vriddhas* that is aged *vata dosha* is physiologically in a dominant state and the *rasadhi dhatus* are in deprived state. This potent combination is responsible for the aged being submerged in a sea of multiple pathology. From *doshic* point of view *vata dosha* is the key culprit in almost all geriatric problems, since the basic features like immobility; degenerative changes, irritability etc are directly linked with *vata dosha*. Therefore *vata shamaka Chikitsa* mainly *Vasti* and *Sneha* application or administration is the primary aim of treatment.
- The cause of ageing is not described clearly in *Ayurveda* however some point can be considered in its regard. Charaka has mentioned the theory of natural destructions (*Swabhavoparamavada*). There is a causative factor for the manifestation of being but no cause is needed for their cessation, some of the view that inhalation of being is caused by the non effectiveness of the causative factor. There are many theories related to ageing were proposed by researchers, but none of them is accepted as a "theory" in the sense of the "theory of gravity" or "theory of relativity". As the ageing process is complex phenomenon with multiple intervening factors for early ageing or delayed ageing, a single theory can't justify all the dimensions of the ageing. The discussion of ageing at different levels i.e., *shareera* (physical), *indriya* (emotional), *satwa* (psychic level) and their reflections on *agni*, *bala/ojas* etc., and other factors like *Parinama*, *Shareera vriddhikara bhavas*, *Garbhahinivrittikara bhava* interplay the process of early or delayed ageing. So an attempt is made to correlate the *ayurvedic* principles with modern theories of ageing and a name was given for this theory. *Ayurvedic Integrated Theory of Ageing* (AITA) brings together parts of Modern theories of Ageing. To be summed up, the main manifestation of the ageing

process at the level of the intact organism is the disruption of the many regulatory processes that provide functional integration between cells and organs.

- *Jara* is an inescapable part of life. In fact, it is the conglomeration of the richness of one's experience of living. *Jara*, the old age is of two types - *Kala Jara* (Timely old age) and *Akala Jara* (Early / Premature Ageing). The former type of *Jara* i.e., *Kalajara* is *Swabhava or Sahaja* in nature, which is cherished by everyone. The latter type i.e., *Akalajara* is unnatural and untimely – a process, occurring ahead of time. This type of *Jara* induces a set of social problems, and mental agony terminating in social stigma.
- *Rasa Vaghbata* is the first man specifically mentioned the *Jara nidana* in his treatise named *Rasa Ratna Samucchya*. He documented five etiological factors for Senescence. In addition to five, *Kala* is mentioned as sixth factor in *Madhava nidana sesham* and the seventh causative factor mentioned by *Charaka*. They are as follows - *Panthah* – *Margayasa* / Exertion due to excessive walking; *Sheetam* - Living in cold climates; *Kadannani* – *Alpahara sevana* / Undernutrition; *Vayovriddhascha yoshitah* - Sex with Elderly women; *Manasa pratikulyatah* / *Manobhighatascha* – Psychological strain; *Kala* – *Visarga kala* and Old age and *Gramyavasa dosha* - Urbanization.
- The present research work is presented in the form of a thesis under two major headings -Literary review and Clinical study. Literary review mainly dealt Ayurvedic and modern aspects of gerontology and geriatrics; analytical overview of the procedure *Matravasti*; analytical review of the *rasayana* and review of drugs used in the treatment. Clinical study presented under subheadings titled Materials and methods; Observations and results; Discussion of results; and Conclusion and at the end summary of the thesis. The last part dealt Bibliography and annexure.

- Eighty two patients - Men of age group 50 - 80 years; Women aged above 45 years or who have attained Menopause and <75 years suffering from common problems of old age irrespective of sex, caste, religion etc. were registered for the study after taking informed consent. Out of which, 16 patients were dropped out. Remaining 66 were studied in detail. Recruitment of study subjects were carried out at MCD Ayurvedic Dispensary, Krishna Nagar, Delhi; PG dept. of *Panchakarma*, Madhav vilas hospital, Jaipur, MCD Ayurvedic Panchakarma Hospitals, Delhi. *Matravasti* was administered for 21 times with *Balashwagandha lakshadi Tail* on alternate days with a dosage 30 - 80ml accordingly. After completion of 21 days of *Matravasti*, all the patients were reviewed for successive 6 months. All the cases were assessed by considering different aspects like ADL, IADL, Emotional status (Geriatric depression scale), Cognitive status (3 Item recall minicog), Mobility, Gait & Balance Deficit (Performance oriented mobility assessment), Involuntary movements (Abnormal involuntary movement scale), Dyspnoea, Constipation, Pain (Brief pain inventory), Urinary incontinence, Dermatological manifestations, Sleep disturbances, Visual impairment, Hearing impairment and DHEA-S (Dehydroepiandrosterone sulfate).
- The overall effect and maximum benefit observed was FAIR (25 % - 50 %) in 38 cases out of 66 patients. GOOD response (51 – 75 % response) in 26 cases and remaining 2 cases Best response (>75%). And the maximum benefit observed among all the cases is 81.8 % and the least effect was 25 %. Among all clinical parameters considered for the study maximum efficacy was found in sleep disturbances (67.5%) followed with gait balance deficit (56.25%), emotional status (55.1%), urinary incontinence (55%), Mobility (53.96 %), Instrumental Activities of Daily Living (IADL)(51.3%), ADL(50.8), constipation (49.5%), cognitive status (48.78%), pain (48.14%), dyspnoea (47.25%), hearing impairment (42.5%), visual impairment

(41.8%), dermatological manifestations (41.17%), and involuntary movements (22.2%). Patients also found positive effect on their associated complaints like Hypertension, gastric troubles, loss of appetite, dementia and the Parkinsonism.

- From doshic point of view, *vata dosha* is the key culprit in almost all geriatric problems. Ideal therapeutics for *vata* pacification is *Vasti karma* and drug of choice is *tail*. If both are used in combination i.e., *tail and vasti* (administration of oil into the rectum – intra rectal therapy), then there will be better clinical outcomes in *vriddha*. Charka advocated regular usage of *Snehana* benefits *Mandajara*, *Shatayu* and *Buddhindriyabalaprada*. After this study it was also found that the therapy has influencing effects on almost all the systems of the body. This multidimensional effect of *Matravasti* in ageing persons enabled them to lead full and active lives by the mitigation of debility and disability.
- After understanding geriatric physiology, pathology and corresponding symptomatology on clinical basis before and after *Matravasti* and taking inputs from modern researches on biology and experimental physiology, probable mode of multidimensional action of *Matravasti* can be hypothesized that ***Matravasti modulates Vata vis – a – vis Nitric oxide expression.***

6. CONCLUSION

Human ageing is characterized by progressive decline (referred to as homoeostenosis) in the homoeostatic reserve of every organ system. This phenomenon is usually evident by the third decade although, the rate and extent of the decline may vary. The decline of each organ system appears to occur independently of the changes in the other organ systems and is influenced by diet, environment, personal habits and genetic factors. The elderly suffer from health problems due to the ageing process like - senile cataract, glaucoma, nerve deafness, musculo-skeletal changes affecting locomotion, failure of special senses and poor reflexes (resulting in accident proneness) and enlargement of prostate in males. Degenerative diseases and long-term illnesses (also called age dependent diseases by Robert Katzman) also affect the elderly. The most common diseases in this category are ischaemic heart disease, hypertension, diabetes, cancer, respiratory diseases (due to chronic bronchitis and emphysema). These are characterized by an increasing incidence of these conditions in a geometric or exponential fashion, as a function of age. The elderly also suffer from conditions which are in the domain of psychology and psycho-sociology. Diminution of sexual activity, reduction in living standards due to retirement and social mal-adjustment, are some of the major causes. While the advances in science and technology have prolonged the expectancy of life, population ageing has brought about changes in cultural and social patterns which have deprived the elderly of their social status, quality of life and self-esteem and of a chance to function usefully in society.

So the management was mainly aimed to improve the function of elderly, to reduce the dependency, reduction of spasticity, improvement in quality of life. The present clinical study undertaken on the Role of *Matravasti* has been found beneficial for the patients of old age

suffering with common geriatric problems like functional dependency, constipation, continence etc.,

After this clinical study, aims and objectives mentioned in hypothesis were established as thesis. The aims and objectives of the study are

1. **To amalgamate the data on Gerontology from Ayurvedic literatures** – The information on gerontology and geriatrics in ayurvedic classics is scattered here and there under different headings and contexts. All such data is collected, well researched, edited and presented under ayurvedic literary review under the heading of '**Geriyutrics**'.
2. **To prove whether *Matravasti* shows Multiple effects on different systems i.e., *Rasayana* effects in *Jarajanya vikaras*** – From doshic point of view, *vata dosha* is the key culprit in almost all geriatric problems. Ideal therapeutics for *vata* pacification is *Vasti karma* and drug of choice is tail. If both are used in combination i.e., *tail vasti* (administration of oil into the rectum – intra rectal therapy), then there will be better clinical outcomes in *vriddhas*. Regular usage of *Snehana* included *Mandajara*, *Shatayu* and *Buddhindriyabala*. After this study it was found that the therapy has influencing effects on almost all the systems of the body. This multidimensional effect of *Matravasti* in ageing persons enabled them to lead full and active lives by the mitigation of debility and disability. *Deerghayu* (longevity), *Smriti* (intact memory), *Medha* (Intellect), *Aarogya* (health), *Tarunavayah* (youthfullness), *Prabha* (lustre), *Varna* (Good complexion), *Swara* (clear voice), *Dehaindriyabala* (strength of body, sensory and motor organs), *Vaksiddhi* (clarity in speech), *Pranati* (endowments) and *Kanti* are the benefits *rasayan Chikitsa*. Incidentally all these features are degraded in the aged persons. Since various negative effects are counteracted through this therapy ‘*matravasti*’, it also known as ‘*Vayahstapana*’ or ‘*Rasayana*’.

3. To substantiate the effects of *Matravasti* and *Rasayana* on clinical basis -*Matravasti*

has proved to benefit the Vriddhas in gaining the functional ability thereby reduced the extent of dependency along with decreased spasticity. In Toto it has improved the quality of life of patients. *Matravasti* with *Balashwagandha lakshadi tail* on alternate days for 21 times proved efficacy on clinical grounds in the cases of common geriatric problems. No adverse effects reported during or after the therapy. Clinical outcomes were seen in different symptoms related to various systems. These multidimensional and broad spectrum effects of rasayana were substantiated through *Matravasti*.

Matravasti with *Balashwagandha lakshadi tail* on alternate days for 21 times proved efficacy on clinical grounds in the cases of *jarajanya vikaras*. No adverse effects reported during or after the therapy. And the improvement has seen in all areas like physical, mental, sensory, motor, behavioural etc., which in turn implies that *matravasti* has shown its influence on overall systemic level of the body. This way it has proved safe, useful and cost effective method. This enables the aged to lead quality life there by to prevent or delay the onset of age related diseases in elderly and to minimize pre death dependence.

OBSERVATIONS AMONG THE PATIENTS:

Incidence of Age : Of all the 66 cases, 36 cases (54.54%) belongs to age group 51-60 yrs , 21 cases (31.81%) belongs to age group 61-70 years , 6 cases (9.09%) belongs to age group 41-50 years, and remaining 3 cases (4.54%) belongs to age group 71-80yrs. The elderly suffer from health problems due to the ageing process and the problems become worsen as the age increases. Undergoing rejuvenating therapies earlier will decrease the severity of problems. This has proved with *Matravasti* benefited more to older adults than Old age people.

Incidence of Sex – Of all the 66 cases, 50 cases (75.75%) were male patients and remaining 16 cases (24.25%) of females. The female patients shown disinterest towards route of administration (Intra rectal).

Incidence of Religion - Of all the 66 cases, 29 cases (43.93%) belongs to Hindu Religion, 14 cases (21.21%) belongs to Muslim community, 9 cases (13.63%) belongs to Sikhs and 7 cases (10.60%) of each belongs to Christianity and Jain.

Incidence of Socio Economic status - Of all the 66 cases, 45 cases (65.18%) from Middle Income group and 14 cases (21.21%) from High Income group and remaining 7 cases (10.6%) are from Low Income group family.

Incidence of Level of Education - Of all the 66 cases, 33 cases (50%) whose level of education is up to graduation, 12 cases (18.18%), whose level of education is up to senior secondary, 8 cases (12.12%) whose level of education is up to secondary , 6 cases (9.09%) whose level of education is above Post graduation, 4 cases (6.06%) whose level of education is up to primary level and 3 cases (4.54%) whose level of education is up to upper primary. It was observed that 59.9% of the cases are graduates. They understand, performed and participated in the questionnaire to assess the parameters before and after the therapy.

Incidence of Dietary habits - Of all the 66 cases, 46 cases (69.69%) are of mixed diet and the remaining 20 cases (30.30%) whose diet is purely vegetarian. It was observed that almost all the patients with mixed diet are complaining of constipation.

Incidence of Addictions - Of all the 66 cases, maximum cases are without specific addictions, 9 cases (13.64%) have habit of occasional alcohol consumption, 6 cases were having smoking habit and 5 cases are of gutkha chewing, 5 cases are addicted to 2 or 3

addictions. It was observed most of those who having addictions are suffering with mobility and balancing problems.

Incidence of Family type - Of all the 66 cases, maximum of 38 cases (57.57%) were of Nuclear family, 17 cases (25.75%) living in small family and remaining 11 cases (16.66%) belong to big family. In the urban areas there is distribution of joint family system. One of the main consequences of nuclear family is loss of 'elderly power' over the younger generation. The nucleation leads to a decrease in co-residence of the elderly with adult children and therefore a decrease in care and support for the aged.

Incidence of Employment status - Of all the 66 cases, 32 cases (48.48%) are working, 25 cases (37.9%) are retired/pensioner and only 9 cases (13.63%) are dependent on their families.

Incidence of community participation activities - Of all the 66 cases 24 cases (36.36%) are not in any community participation, 18 cases (27.27%) are participating in Yoga, 14 cases (21.21%) are participating in Religious activities and 10 cases (15.15%) are participating in social activities. Older adults are highly likely to associate themselves with an organized religion and to utilize religious coping skills. Involvement in religious activities has been associated with better health status and health outcomes.

Incidence of Living with Spouse - Of all the 66 cases, 36 cases (54.6%) are living along with their spouse 18 cases (27.2%) are widow/widower and only 12 cases (18.18%) are living separately from their spouse. Living with spouse is an important independent factor in preventing and delaying ageing psychosocial and physiological symptomatology.

Incidence of Onset of Menopause - Of all the 16 female patients 8 cases (50%) attained menopause at 46-50 yrs of age, 4 cases (25%) attained the menopause at 40-45 yrs of age,

and remaining 4 cases (25%) attained at an age more than 50 yrs of age. Menopause, or the “change of life,” is different for each woman. The average age of a woman having her last period, menopause, is 51. But, some women have their last period in their forties, and some have it later in their fifties. Vaginal dryness in geriatric women is very common and one in three postmenopausal women will experience vaginal dryness in geriatric women

Incidence of Clinical symptomatology - Of all the 66 cases maximum number of patients complaining of constipation (89.3%). This may be due to less fibre in diet, reduced fluid intake and decrease in work activity, taking less exercise, less effective movement of waste through the bowel due to a weakening of the bowel muscles and taking medicines. Less than 50% of cases are suffering with Visual impairment, Urinary incontinence, Hearing impairment. From >50 to 75 % cases are suffering with Dermatological manifestations, sleep disturbances, Pain , Dyspnoea, Involuntary movements, Gait & balance, Mobility, Cognitive status, Emotional status and Functional status.

Incidence of Associated complaints - Additional to the clinical symptomatology, these complaints were also reported by the patients. Of all the associated complaints, frequently reported condition was Hypertension (n=34) followed with gastric troubles (n=34), loss of appetite (n=24), dementia (n=15) and at the last Parkinsonism (n=6).

EFFECT OF MATRAVASTI ON CLINICAL PARAMETERS

Activities of Daily Living (ADL) - The effect of *Matravasti* found beneficial in restoring ADL. The clinical outcomes of the study found significant results both clinically (by 50.8% improvement) and statistically(< 0.0001).

Instrumental Activities of Daily Living (IADLs) – Both ADL and IADL were considered to assess the functional status of the recruited geriatric cases. The effect of

Matravasti found beneficial in restoring IADL in patients. The effect of *Matravasti* in patients was proved significant results both clinically (by 51.3 % improvement) and statistically (< 0.0001).

Emotional status - The Emotional status was assessed by using Geriatric Depression Scale (GDS). After this therapy it was found significant results in patients both clinically (55.5%) and statistically ($p < 0.0001$). The present study evidence supported that *Matravasti* showed impact in mental status by promoting physical health and thus improve the quality of life and emotional well being.

Cognitive status - The Cognitive status was assessed by applying 3 ITEM RECALL MINICOG. After this therapy it was found significant results in patients both clinically (48.78%) and statistically ($p < 0.0001$).

Mobility - Mobility assessment before and after the therapy shown interesting response with clinically significant improvement of 53.96% and the same effect was also statistically highly significant ($P < 0.0001$).

Gait & Balance Deficit - The Gait & Balance Deficit was assessed by using POMA – Performance Oriented Mobility Assessment scale. After the therapy response found was clinically significant by 56.25% and the same effect was also statistically highly significant ($P < 0.0001$).

Involuntary movements – Abnormal Involuntary Movement Scale (AIMS) was applied for the assessment of involuntary movements in recruited geriatric cases. After this therapy it was found encouraging results both clinically (22.2%) and statistically ($p < 0.0001$).

Dyspnoea - Effect of *matravasti* on Dyspnoea before and after its administration proved its efficacy with significant results both clinically (47.25%) and statistically ($p < 0.0001$)

Constipation - This therapy achieved clinically significant improvement of 49.5 % and with highly statistical significance ($p < 0.0001$).

Pain - The evaluation of Pain by using BPI was assessed before and after administration of *Matravasti*. This therapy achieved clinically significant results of 48.14% improvement and with highly statistical significance ($p < 0.0001$).

Urinary incontinence - The effect of *Matravasti* in relation to Urinary incontinence before and after treatment was observed clinically highly significant by 55 % improvement and statistically highly significant ($p < 0.0001$).

Dermatological manifestations - The evaluation of Dermatological manifestations before and after administration of *Matravasti* was observed, which is clinically significantly by 41.17% improvement and corresponding statistically highly significant. ($p < 0.0001$)

Sleep disturbances- After the therapy it was found a remarkable change and the same was shown as highly significant both clinically (improvement by 67.5 %) and statistically ($p < 0.0001$).

Visual impairment - Assessment of visual impairment in ageing individuals before and after the therapy has shown positive results by a mild improvement of 41.8 % with a statistical significance.

Hearing impairment - After therapy it was found interesting change and the same was shown as highly significant both clinically (improvement by 42.5%) and statistically ($p < 0.0001$).

Dehydroepiandrosterone (DHEA) - Due to high cost of the test, only twenty patients could able undergo the test procedure before and after the therapy. But there is no change observed in values before and after the therapy.

FINAL RESULT

The overall effect and maximum benefit observed was FAIR (25 % - 50 %) in 38 cases out of 66 patients. GOOD response (51 – 75 % response) in 26 cases and remaining 2 cases Best response (>75%). And the maximum benefit observed among all the cases is 81.8 % and the least effect was 25 %. Among all clinical parameters considered for the study maximum efficacy was found in sleep disturbances (67.5%) followed with gait balance deficit (56.25%), emotional status (55.1%), urinary incontinence (55%), Mobility (53.96 %), Instrumental Activities of Daily Living (IADL)(51.3%), ADL(50.8), constipation (49.5%), cognitive status (48.78%), pain (48.14%), dyspnoea (47.25%), hearing impairment (42.5%), visual impairment (41.8%), dermatological manifestations (41.17%), and involuntary movements (22.2%).

Scope for further research -

- Since the study was carried out for smaller group, for further evaluation the same study can be undertaken for larger group.
- The same study can be undertaken in aged patients having specific problems like Osteoarthritis, parkinsonism, dementia, urinary incontinence, post menopausal complaints etc.,
- As the procedure *matravasti* is safe, simple and cost effective, it has to be studied in terms quality of life in senior citizens.
- Pharmacophysiological mechanisms behind the absorption of oil administered through *vasti* and fate of the drugs; its corresponding systemic effects have to be

studied objectively. Thereby other drugs can also be administered through this rectal route for better clinical outcomes, which further leads to evolve new treatment strategies.

- An experimental study to evaluate the modulation of Nitric oxide expression through *Matravasti*
- *Rasayana* has definitive role in the *Jarajanya vikar*, so it has to be tapped in proper way to go on large scale for the benefit of the society.