A Review on the Pathogenesis and Management of Vatavyadhi with Focus on the scope for Rasayana therapy

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ABSTRACT:
Rasayana means a path or system to acquire Rasa or adequate nutrition for the body. It is a special therapy or modality which provides proper nourishment to every cell or tissue of the body. It also normalizes cell functions and preserves health at the molecular level. Ayurveda classifies Rasayana into various types that can be used according to the context. Vata, one of the Tridosha, is the prime driving force behind all body activities. When Vata becomes imbalanced, it disrupts all of the events in the body, causing a variety of damage and diseases. Vata vyadhi refers to a group of diseases caused by vitiated Vata. Though it should be predominant in old age, because of today's fast-paced and hectic lifestyle, stress etc its occurrence seems to increase in young adults too. Rasayana is a way to achieve homeostasis and thus retarding the process of the aging phenomenon and preventing diseases. Rasayana chikitsa or Jara Chikitsa which has been given a distinguished place in Ayurvedic Samhitas due to its importance in rejuvenating all the cells of the body, holds to serve positive results, particularly in the management of Vatavyadhi

Keywords: Vata, Vatavyadhi, Rasayana, Rejuvenating Therapy, Neurodegenerative Disorders

INTRODUCTION
Since the time of Veda, Vatavyadhi has been given prime importance. Even though Vata is one among the three Dosha, the diseases of Vata are more numerous than those of the other two together. Vatavyadhi is mentioned in Brihadtrayi and also included in Ashtamahagada. From this, it is clear that Vatavyadhi has got great importance. There are 80 different types of Vatavyadhi. Though it is dominant in old age but in the present time due to fast and busy life, stress, prolonged sitting posture in the working place, dietary habits, working late at night, improper sleep etc, Vata gets aggravated even in young individuals. Because of rising technology, critical busy schedules, restless routine, stress, anxiety, running after comforts in life etc. human society is leading a mechanical life, unable to follow the Dinacharya and Ritucharya as explained in our science. To get rid of this, people should know the causes that are responsible for the vitiation of Dosha and try to avoid these causative factors as it is said ‘Prevention is better than cure’. Rasayana is a method of achieving homeostasis, thereby slowing the aging process and preventing disease. Rasayana can be understood as
nutritional dynamics for body and psyche rejuvenation when in good health.

MATERIALS AND METHODS:
All the available classical Ayurveda texts regarding the concerned topic were studied. Articles published in Journals on the related topics were also searched using online databases. From the list of articles dealing with either Rasayana or Vatavyadhi, finally, about 20 articles that were found highly associated with the subject of interest were selected for review.

Importance Of Vata
According to Ayurveda, the functioning of the mind and nerves is dependent upon Vaya. Vata appears to be the body's major driving force, despite the three somatic humours being equally vital and essential and mutually balancing one another to maintain an equilibrated steady state. Vayu is the most important because it controls all types of sensations and motor actions. In short, Vayu is responsible for all neuro-muscular and psychological activities. The biological Vata is not only mobile but also capable of keeping Pitta, Kapha, Dhatus and Malas which are incapable of independent movement of their own. Vata is stated to be Swayambhu i.e., self-existent or self-originated.

Analysis on Guna of Vata
The qualities mentioned as of Vata have been analysed on the basis of functions (Table I)
The term Vatavyadhi (diseases of Vata) is used in a compound way. It can be interpreted in two different ways as follows:

1. Vata-eva-vyadhi i.e., Vayu itself is the disease. By implication, the aggravated Vayu itself after afflicting the concerned Dushya pervades the entire body or a part of it to give rise to different types of pain for which the ailment is called Vata-Vyadhi.

2. Vatad-Vyadhihi i.e., the diseases caused by Vata. By implication, other Dosha and Dushya are vitiated in a special way by Vayu to produce diseases in the entire body or in a part of which is called Vata-Vyadhi.

Pathological Aspect Of Vata
Vata is quick in causing emergency conditions. It is established that Vata is the driving force behind nerve impulses and also that the central nervous system can be considered as the seat of Vata. Therefore, the terminology ‘Vatavyadhi’ mainly comprises a broad spectrum of diseases of the Central Nervous System. But the importance of the Rasa Rakta complex, which has the function of Preenana and Jeevana to the nervous system also should be taken into consideration. Any disturbance in these two functions can create a disorder in the functions of Vata. Another way of approach to the management of deranged Vata is through its nutritional source. This source can be the cause of vitiation of Vata and also the way of treatment. There is also another source for the vitiation of Vata and it is being used in the treatment also, which is the skin. This organ and nervous system have a common source in embryological development. Skin is known as Sparsanendriya, as no sensation can occur without a sense of touch. This indicates the close relationship between Sparsaendriya and CNS.
The eto-pathological factors are as follows:

Nidana
Vayu is aggravated by excessive consumption of unctuous, cold, scanty, and light food, excessive sexual indulgence, excessive sleeping, inappropriate therapeutic measures, administration of therapies that cause excessive elimination of Dosha and blood, excessive fasting, exercise, and other physical activities, excessive emaciation as a result of worry, grief, and diseases, lying and sitting in beds that are too firm, anger, daytime sleep, fear, and suppression of natural urges. Because of the above-mentioned factors, the aggravated Vayu while filling up the channels of circulation which are empty or weak in quality because of the lack of unctuousness, etc, produces different kinds of ailments affecting the whole body or a part thereof. Habituation of Rooksha, Sheeta diet and regimens lead to Dhatushayajanya Vatavyadhi whereas those which cause the formation of Ama lead to Margavrodhjanya Vatavyadhi.

Poorvarupya
Indistinct manifestations of the signs and symptoms of these ailments constitute their Poorvaroopa.

Roopa
Distinct Roopa includes contraction and stiffness of joints and pain in the bones as well as joints, hoaripilation, delirium and spasticity of hands, back as well as head, lameness of hands and feet and hunch back, atrophy of limbs and insomnia, twitching sensation and numbness in the body, shrinkage of the head, nose, eyes, clavicular region and neck, splitting, prickling and excruciating pain, convulsions, and unconsciousness. The aggravated Vayu produces specific diseases because of the specific nature of the causative factors and the seats of manifestations.

Samprapti
Vayu or Vata gets aggravated to cause diseases in either of the two ways i.e., by Dhatu Kshaya (diminution of tissues)
or by Marga Avarana (obstruction to its channels) of circulation.\textsuperscript{15} Etiopathogenesis of Dhatukshayajanya and Margavardhajanya Vatavyadhi has been represented in Fig.1 and Fig 2. Dhatu Kshaya can be understood as the decrease of Snehadi qualities or change in the composition of Dhatu. Margavardha may be due to Kapha, Ama etc., possible through the effect of Dhamaani Pratichayam.\textsuperscript{16} It leads to loss of nutrition and oxygen supply to parts of the brain due to Vimarga Gamana of the Rasa-Rakta complex. Nerves including the cells in the brain and spinal cord are the pathways through which Vayu moves. Any damage or decay of these nerves invariably causes impairment of the functioning of Vayu resulting in the production of several diseases of Vata, popularly known as Vata Vyadhi Chikitsa

Dhatukshayajanya Vatavyadhi can be treated by controlling the vitiation of Vata and correcting the obstruction of Dhatu. Margavardhajanya Vatavyadhi can be treated by removal of obstruction and correcting the direction of flow of Vata with medicaments having Anabhishyangdi, Snigdha, Kapha Pitta Aviruddha and Vatanulomana properties.\textsuperscript{17} Therefore, the line of treatment is based on the principles like the removal of obstruction in the channels (Srotho Sodhana), restoration of the normalcy of these cells (Prakriti Sthapana), the appropriate nourishment (Tarpana) e.t.c. The medicines having Rasayana properties are most useful in the alleviation of diseases and nourishment also. Thus, Rasayana plays an important role in curing Vata Vyadhi and also prevents the recurrence of diseases.

Rasayana

Despite advances in medical science, such as the development of sophisticated, investigative tools and a deeper understanding of human physiology and structure, there has been no significant control over diseases; rather, new health issues are emerging on daily basis, many of which have no remedial solution. These conditions may be metabolic, genetic, or infectious. As a part of the healthcare delivery system, the time has come to reexamine the health management system and return to the philosophy of prevention and preservation as the first step toward treatment. Every medical system emphasizes disease treatment, but in Ayurveda, disease treatment is always secondary to maintaining and preserving health, which is the primary goal of health-care plans. Perhaps it is for this reason that Ayurveda places such emphasis on health maintenance and sustenance in terms of physical, mental, social and spiritual aspects.

Ayurveda mentions daily and seasonal regimens, dietary and social behavior codes, and the application of Rasayana to achieve this goal. Rasayana is one of the Ayurvedic disciplines that include the specialized use of herbs, herbomineral formulations, food articles, and lifestyle, as well as a self-discipline with social etiquette, to achieve the optimum state of tissues and systems of the body so that etiological factors have the least impact on the body. Looking at the multifaceted approaches of Rasayana, it can be said that the first approach of Ayurveda was a deep analysis of health parameters, their assessment, and maintenance, and thus, treatment in Ayurveda is defined as all such activities in the form of diet, lifestyle, or medicines that target Dhatu Samya (achieving the state of homeostasis) rather than simply treating the disease.\textsuperscript{18}

According to Ayurveda, the preservation of health and the occurrence of disease are primarily determined by how a person maintains the quality and quantity of food, as well as food habits, lifestyle, psychological status, and the effect of environmental conditions. Thus, the quality and quantity of food play an important role in health preservation, with due consideration for Agni (digestion and metabolism mechanics) and individual suitability based on Prakriti (body constitution). Healthy eating habits and nutritious food have been referred to as Ajasrika Rasayana (Rasayana in the form of food), which includes nourishing appropriate healthy food. As per Ayurveda, milk, ghee (clarified butter), honey etc. are few examples of such Ajasrika Rasayana, and this can be practiced judiciously in healthy individuals. Some Rasayana are disease-specific and are used in specific disease states because they induce specific immunity and bio-strength to combat a specific disease. This type of Rasayana is known as Naimittika Rasayana.\textsuperscript{19} The tissue-specific Rasayana drugs can be used in conjunction with the treatment of the underlying disease to increase tissue strength and disease-fighting power, allowing faster and better relief and the prevention of recurrences. The Ayurvedic Rasayana herbs mentioned in classics like Aswagandha, Brahmi, Sankhpushpi etc. and formulations such as Chyavanaprasha, Brahmi Rasayana, Amalaki Rasayana etc. are found to have potential telomer protective and DNA repair activities thereby delaying cell ageing and degeneration processes.\textsuperscript{20}

Rasayana In Vatavyadhi

For getting a better response to Rasayana drugs a person needs to undergo Samshodhana as a preparatory process.\textsuperscript{21} The person is strictly advised to undergo Snehana,
Swedana and Panchkarma procedures as per need i.e Vamana, Virechana, Basti, Nasya. It is believed that the diseases cured by Sanshodhana therapy never relapse while the diseases cured by Samsamana treatment may recur. Panchakarma not only eliminates the disease-causing toxins but also revitalizes the tissues. It is not only good for alleviating the disease but is also a useful modality of treatment in preserving and promoting perfect health. Administration of all types of rejuvenation therapies along with Silajatu, Brahmi, Chitraka, Guggulu etc along with milk are indicated in Vatavyadhi. The patient is also advised to take Chyavanaprasha prepared with one thousand one hundred Pala of sugar, regularly along with milk as food. There is no drug better than Lasuna for the treatment of all types of Sudhavata and Avarana vata diseases except the conditions involving Pitta and Rakta.

Chyavana Prasa

Chyavanaprasha is indicated in cough, dyspnea, fever, consumption, heart disease, gout, urinary tract problems, sperm anomalies and speech disorders. It promotes physical growth in children, the elderly, the injured, and the emaciated. If used properly, it bestows great intelligence, memory, complexion, healthy state, long life, downward movement of Pavana, sense organs, and digestive fire, desire for woman, and body strength. It also boosts protein synthesis, which improves muscle tone. The fruits of Amalaki (Emblica officinalis), an important ingredient in Chyavanaprasha contain Ellagitannins (Chebulagic acid, Phyllanemblinin C, geraniin) and hydrolysable tannins. Tannins are antioxidants often characterized by reducing power and free radical scavenging activities. Amalaki has found to have anti-tumor, immunomodulatory, expectorant, cardiotonic, anti-pyretic, antioxidative, antiviral, anti-emetic, anthelminic, anti-tussive and gastroprotective properties. It is used as hepatoprotective, aphrodisiac, anticytotoxic, antigenotoxic, antialclogenic, anticarcinogenic and antimutagenic in viral hepatitis, leucorrhoea, atherosclerosis, hyperacidity, low-grade fevers and prevents hepatotoxicity and nephrotoxicity produced by lead and aluminum. It is used both as medicine and as a tonic to build up lost vitality and vigor. This Avaleha should be consumed in appropriate doses (1Pala = 48g) daily by the person residing in the special apartment and eating only appropriate food. This is said to be consumed by the sage Chyavana, who despite his old age, became young once again.

Silajatu Rasayana

Silajitu is a rejuvenator (‘Rasayana’) of traditional Hindu Ayurvedic origin, which clearly has attracted considerable interest in India. Silajitu is a blackish-brown exudation of variable consistency exuding from layers of rocks in many mountain ranges of the world, especially the Himalayas and Hindukush ranges of the Indian subcontinent. Silajatu exhibits profound antioxidant, immunomodulatory, anti-inflammatory, analgesic, anti-diabetic, anti-ulcer, antiviral, Protection of mast cells from degranulation, Free radical scavenging and antioxidant effect, cognitive and memory enhancing activities. All varieties of Silajatu (Bitumen) are bitter, pungent, not very hot in potency, pungent at the end of digestion, and have the Chedana property in particular. Of all the types of Silajatu, the one that comes from iron is said as the best. Administration of Silajatu is highly beneficial to the body, bestows all the good effects immediately, but does not cause any disease.

Brahmi Rasayana

Brahmi Rasayana, a formulation known to have memory-improving activity is also proven of its antioxidant, anti-inflammatory, neuroprotective, pro-cholinergic and anti- acetylcholinesterase properties. Brahmi extracts displayed remarkable potentialities in scavenging free radicals and protecting neural cells from cytotoxicity and DNA damage. When consumed with honey for a year, the person gains intelligence, memory, courage, overcomes old age, disease, stupor, lasitude, exertion, and exhaustion and lives for a full hundred years with wealth, brilliance, and reputation, and eliminates diseases characterized by a significant increase in Vata.

Chitraka Rasayana

The Chitraka (Plumago zeylanica) is dried in the shade and ground into a fine powder, should be licked with ghee or a mixture of ghee and honey or consumed along with milk or water for one month, and the person will live for a hundred years without any diseases, endowed with intelligence, strength, radiance, a pleasant appearance, and good digestive power. It removes all Vata roga when taken with Taila for one month, with Mutra cures Svitra and Kushta, and alleviates Arshas when taken with Takra. Chitraka Rasayana is used as an immunomodulator, anti-oxidant, anti-cancerous, anti-allergic, anti-hyperlipidemic, anti-inflammatory and memory enhancer.

Lasuna Rasayana

There is no better drug than Lasuna (Allium sativum) for treating all types of Avarana vata except those involving Pitta and Rakta, as well as all types of Shudhavata. The filtered juice of Lasuna should be mixed with three times its volume of either wine, buttermilk, curd water, or gruel, or oil, ghee, muscle fat, marrow, milk, meat juice, or any
decotion of drugs appropriate to the diseases, or the filtered juice alone should be taken in the morning. Gandusha (gargling) should be performed first to cleanse the throat passage. Lashuna by its qualities & processing techniques proves to be one of the best Naimitha rasayana. The drug Lashuna has been proved as one of the best drugs in Vata Vikara.

DISCUSSION

Due to the unwholesome diet and regimen the incidence of Vatavyadhi is increasing in younger generation too. As a preventive and curative modality, Rasayana has got an influential role in the management of Vatavyadhi. Though Rasayana promotes nutrition generally, some of them have specific action on certain organs or tissues; like, Medhya Rasayana for brain, Hridya Rasayana for heart, Twachya Rasayana for skin, Chaksusa Rasayana for eyes etc. Similarly, Rasayana promoting nutrition relevant to bio-lapses occurring in different phases of the life span are age-specific. Rasayana can be generally classified into two based on the metabolic endproduct (Vipaka) Madhura and Katu. Those Rasayana drugs having Madhura Vipaka are found to enhance the Reticulo Endothelial System (RES) and other components of the immune system. As the Central Nervous System, Endocrine system and Immune system are found to have close interaction with each other to maintain the general functions of the body, these Rasayana could have broad-spectrum effects on initiating a massive cascade of events involving various neurotransmitters, hormones and amines. Rasayana drugs are found to produce prostaglandins and antioxidants, and they also have scavenging action on free radicals, super oxides and peroxides thereby strengthening the defense mechanism, preventing stress and other deteriorating actions. Rasayana drugs like Amalaki are found to have significant DNA repair activity and other adaptive responses thereby helping in the maintenance of a balance between damage and rate of repair. Apart from the Rasayana formulations mentioned in the context of Vatavyadhi, other Rasayana formulations, like Pippali Vardhamana Rasayana has proved to have significant effect in the management of diseases associated with Vata like Amavata (Rheumatoid Arthritis). Brahma Rasayana has got scavenging action of nitrates, peroxides and free radicals, Triphala extract has got radioprotective effect by free radical scavenging and antioxidant activities, Medhya rasayana or the neuro nutraceuticals help to promote the cognitive functions of the brain, and in the improvement of short term memory. Rasayana drugs may act as adjuvant drugs in stem cell therapy that help to regulate stem cell proliferation and differentiation which helps in the management of neurodegenerative diseases. Rasayana therapy, which truly aims at body rejuvenation, has been given its own distinguished place in Ayurvedic classics. Rasayana therapy can be used to treat degenerative joint diseases like Sandhigata vata based on the method of use and scope of application. Rasayana drugs work through antioxidants, anti-aging, anti-inflammatory, and immunomodulatory properties. However, before administering Rasayana therapy, our ancient scholars have emphatically stated that biopurification of the body is a must because if the body channels are not clean, the effect of Rasayana will not be achieved in the same way that colors do not take up during dying of a cloth that has not been cleaned.

CONCLUSION

Vata is naturally predominant at the old age phase of life and hence as age advances people become more prone to develop Vatavyadhi. Rasayana drugs are a choice in regenerating and restoring the health of individuals thereby promoting in healthy ageing. As ‘prevention is better than cure’, the practice of Rasayana drugs from an early stage will have an enhanced effect in imparting biological sustenance to the cells, tissues, organs and the body. Also, ancient scholars have indicated its administration either from adolescence or middle age so that these herbal formulations can help in regeneration and graceful aging, besides their many beneficial effects including prevention of neurodegenerative diseases. The practice of Rasayana may also be useful along with various modern therapeutic applications where DNA damaging agents are used. Thus, the application of Rasayana Therapy can be extended to conditions where the microenvironment for cell nourishment diminishes due to aging or diseases. Quality of life is important for an individual; so Ayurvedic research should be focused on identifying key areas of Rasayana application and generating sufficient evidence with guidelines so that Rasayana therapy can be included in National Health Policy and also efforts should be made to incorporate it judiciously in the routine immunization schedule from birth for the betterment of humanity.

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115
Table 1 Analysis of the qualities ascribed to Vata based on functions.

<table>
<thead>
<tr>
<th>Sl No</th>
<th>Guna</th>
<th>Actions</th>
<th>On aggravation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Laghu</td>
<td>• Provides lightness</td>
<td>• decrease in strength</td>
</tr>
<tr>
<td></td>
<td>(light)</td>
<td>• Causes rapid movements eg: Spandana</td>
<td>• Leads to Kshayaja Vikara</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• twitch, fibrillation-like conditions</td>
</tr>
<tr>
<td>2</td>
<td>Ruksha</td>
<td>Responsible for Rukshata, Kathinyata.</td>
<td>Causes Stambhana</td>
</tr>
<tr>
<td></td>
<td>(dry)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Sheeta</td>
<td>Helps in the maintenance of body temperature in optimal level</td>
<td>causes Stambha &amp; Agnimandya</td>
</tr>
<tr>
<td></td>
<td>(cool)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Sukhsma</td>
<td>Helps in performing functions at subtle level</td>
<td>Causes Sthambhama</td>
</tr>
<tr>
<td></td>
<td>(subtle)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Chala</td>
<td>Helps in Anulomana</td>
<td>Causes aggravated/diverted movements (Atiyoga,Mityayoga,Vimargagamana)</td>
</tr>
<tr>
<td></td>
<td>(movement)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Vishada</td>
<td>Helps in Shoshana, Ropana</td>
<td>Causes Datukshaya &amp; Balakshaya</td>
</tr>
<tr>
<td></td>
<td>(non-slimy)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Khara</td>
<td>Helps in roughness, dryness</td>
<td>Causes dehydration and deterioration of body</td>
</tr>
<tr>
<td></td>
<td>(rough)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Fig 1  **DHATUKSHAYAJANYA VATAVYADHI**

Improper diet and regimen  
Effect of *Kala* (age etc)

Aggravation of *Vata* (specifically *Vyana Vata*)

Increase of *Vataja* and depletion of *Kaphaja* elements in the body

Transported through the *Rasavaha* channels

Depletion of *Shleshaka Kapha* in joints

Gets localized in *Rikthasthana* (empty spaces) specifically joints due to *Kha-Vaigunya*  
(*Sthanasamshraya*)

**DHATUKSHAYAJANYA VATAVYADHI**

Fig 2  **MARGAVRODHAJANYA VATAVYADHI**

Obstruction to the channels carrying nutrients  
Vitiated *Medas*

(due to *Medoavarana*)

Improper nourishment to *Asthi Dhatu*  
Excessive pressure over weight-bearing joints

Depletion of *Asthidhatu* especially near the joints

Vitiation of *Vyana Vata* in joints  
(Vitiated *Dosha* circulated through channels)

Gets localized in *Rikthasthana* (empty spaces) specifically joints due to *Kha-Vaigunya*  
(*Sthanasamshraya*)

**MARGAVRODHAJANYA VATAVYADHI**