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### Systemic Review Of Parkinson's Disease In Purview Of *Kampavata*

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#### ABSTRACT: -

Ayurveda is the eternal splendid science of medicine because it deals with all aspects of life, especially of human being science time immemorial. The Parkinson's disease (*Kampavata*) is a progressive neurodegenerative disorder. The disease affects approximately 2 out of 1000 people, and most often develops after age of fifty, the clinical course is chronic and progressive with severe disability attained after ten years. According to Ayurveda, *Kampavata* is a *Nanatmaja* disorder of *Vata*. The Parkinson's disease is a slowly progressive disease of late adult life and is one of the most prevalent neurological disorders. There is no cure for Parkinson's disease, but medications and multidisciplinary management can provide relief from the symptoms. For the treatment of Parkinson's disease there are numerous drugs used by modern medicinal system but only L Dopa has better results in addition numerous Ayurvedic drugs which has similar compounds are useful in this grave disease.

This manuscript construct for the absolute information about the Parkinson's disease (*Kampavata*) the main headings like etiopathogenesis, feature functions in conjunction with specific treatments for the remedy of those ailments.

**Keywords:** Ayurvedic management, *Kampavata*, Parkinson's disease



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## INTRODUCTION

Parkinson’s disease (PD) was first described by Dr. James Parkinson in 1817 as a ‘shaking palsy’. It is a chronic, progressive neurodegenerative disease characterized by both motor and nonmotor functions. Parkinson’s disease is a degenerative disorder of the central nervous system. The disease has a significant clinical impact on patients, families, and caregivers through its progressive degenerative effects on mobility and muscle control. The motor symptoms of Parkinson’s disease are attributed to the loss of striatal dopaminergic neurons, although the presence of nonmotor symptoms supports neuronal loss in nondopaminergic regions as well. The term parkinsonism is a symptom complex used to describe the motor functions of Parkinson’s disease, which include resting tremor, bradykinesia, and muscular rigidity. Parkinson’s disease is the most common cause of parkinsonism, although a number of secondary causes also exist, including diseases that mimic Parkinson’s disease and drug induced causes.<sup>[1]</sup>

In ancient Indian medical system of Ayurveda Parkinson’s disease comes under *Vatavyadhi*. Name as *Kampavata* which is characterized by *Kampa*(tremors), *Stambha*(rigidity), *Chesthahani*(akinesia) and *Gativikriti* (gait disorders).<sup>[2]</sup>

## MATERIALS AND METHODS

All the books and text related to Ayurveda and contemporary science were explored and relevant information was presented in organized matter.

### Parkinson’s Disease in Ayurveda Literature:

According to Ayurveda most of the diseases of *Vata* are degenerative disorders of nervous system. 80 types of vatic disorders are described in Ayurveda texts. The Parkinson’s disease is comparable to *Kampavata*, which is categorized among *Nanatmaja* disorders of *Vata*. No standard criteria exist for diagnosis of Parkinson’s disease. Parkinson’s disease is a most common extra- pyramidal degenerative disorder. There are many manifestations of Parkinson’s disease, however the classical diagnostic symptoms are: slowness and poverty of movement, stiffness, shaking. The major symptoms of Parkinson’s disease are related to deficiency of dopamine. The physical signs of Parkinson’s disease include:

1. Slowness of movement (bradykinesia) or poverty of movement (hypokinesia), eg loss of facial expression and arm swing, problem with the fine movements.
2. Rigidity
3. Rest tremor

Depression, emotional changes, trouble in swallowing and chewing, speech changes, urinary problems, muscle cramps, dystonia, pain,

fatigue, loss of strength are also the presenting clinical features of Parkinson's disease.<sup>[3]</sup>

In Charaka Samhita, *Vepathu* has been considered under *Nanatmaja* disorder of *Vata*.<sup>[4]</sup> Many other references regarding the *Kampa* are available in the name of *Vepathu*, *Vepana*, *Prevepana*. The main symptoms of the disease viz, *Kampa*(tremor) and *Stambha* are found in some pathological conditions of *Vata Vyadhi*. The reduced *Vata* affecting the *Marma* cause *Vepana*<sup>[5]</sup>. This concept provides knowledge for the pathology of tremors relating to brain. Charaka included *Stambha* in symptoms of vitiated *Vata* and explained that *Stambha* is a disorder of *Snayu*. Charaka mentions that the conditions where *Pitta* is reduced and *Kapha* and *Vata* are elevated then they produce signs like *Kampa* and *Stambha*<sup>[6]</sup>. The majority of signs and symptoms of *Kampavata* also are stated in unique *Avaranas*, Charaka says that *Avarana* of *Vyana* and *Udana* with the aid of using *Kapha* produces signs and symptoms like *Gatisanga*, *Vakswaragraha*, *Gurugatrata*, *Stambhana* and *Kampanam*. In *Shirahkampa* has been taken into consideration as one of the most important disease of *Shirah* and *Nasya* has been recommended for its cure. Acharya Charaka referred to tremors in special organs like head. Maharshi Sushruta referred to the signs *Stambha* and *Kampa* are referred to in "*Snayu Prapta Vata*". *Vepathu* is also a long term complication of *Dusivisha*. Excessive use of *Katu*, *Tikta Rasa* and trauma in *Pranavaha Srotasa* also can produce the same signs. Ashtanga Sangraha mentions *Kayasya Vepathu* as symptom of ageing and *Kampa* is cited in *Raktakshaya*, *Pittakshaya* and *Kaphakshaya* condition. Acharya Madhavakara for the first time expounded the disorder *Vepathu* in *Vatavyadhi* chapter which is characterized by *Sarvanga*

*Kampa* (tremors throughout the body) and *Shirokampa* (tremors in head). The commentator Vijayarakshita has further illustrated that in *Shirokampa*, tremors of limbs may also be included. This indicates the cardinal clinical picture of *Kampavata* (parkinsonism) are well documented in Ayurveda though in the scattered form<sup>[7]</sup>

### Etiology (*Nidana*) of Parkinson's Disease:

Although etiology of the disease not well known. Parkinson's disease is believed to be due to a combination of genetic and environmental factors. The factors as accelerated ageing, neurodegenerative changes, increased free radical and iron content in the Substantia nigra repeated head injury, environmental factors as pesticides, contribute in the pathogenesis of thistle disease. In Ayurveda *Kampavata* is described as a *Vataja* disorder, so the causative factors of *Vata Vyadhi* can be considered as etiological factors of *Kampavata*. They are reviewed as.

1. *Aharaja* (dietetic factors)- *Rukshana* (ununctuous diet), *Laghvana* (light diet), *Kashayana* (astringent taste), *Katvana* (acrid taste), *Tiktana* (bitter taste), *Abhojana* (starvation), *Alpasana*, *Pramitasana*.
2. *Viharaja* factors- *Atipradhavana* (excessive running), *Ativyavaya* (excessive sexual intercourse), *Atiprajagara* (excessive awakening), *Ativyayama* (violent exercise).
3. *Manasika* (psychological factors)- *Bhaya* (fear), *Chinta* (thinking), *Shoka* (grief), *Utkantha* (anxiety).
4. Miscellaneous factors- *Abhighata* (trauma), *Ama* (undigested food), *Asrika kshaya* (loss of blood), *Dhatukshaya* (loss of body elements). *Atiyoga* of *Stambhana* and complications of *Vamana Karma*, symptom

or complication of *Vataja Ardita*. *Dalhana* mentions *Kampa* as *Kalabalapravritta* disease which indicates age related pathology of disease. *Vagbhata* observes tremor and flexion posture as symptoms of aging. *Vepathu* is the symptom of second *Vishavega*. *Vepathu* is a long term complication of *Dushivisha*.<sup>[8]</sup>

### Symptoms of Parkinson's Disease (*Kampavata*):

The foremost scientific displays in Parkinsonism are bradykinesia, tremor and tension and postural instability. In Ayurvedic classics, the illnesses noted in a comparable style are *shirakampa*, *kampavatan* and *vepathu*. The sign and symptoms of Parkinson's disease in line with etio pathogenic mechanisms of Ayurveda is discussed for better knowledge of the disease.

1. *Kampa* is described as *Vepanam Ekdesha Vyakta Kampanam*. *Kampa* is ailment of *Vyana Vayu* and the increase in its *chala* property results in *Kampa*. *Charaka* mentions that, in condition where *Pitta* and *Kapha* are in stage of diminution, the increased *Vata* affecting the *Marma* (vital parts) does away the awareness and causes trembling in the patients. This concept provides a base for understanding pathology of tremor referring to brain. Onset of Parkinson's disease is typically asymmetric with the most common initial finding being an asymmetric rest tremor in an upper extremity. Often attributed to spontaneous oscillatory behavior of group of neurons within the CNS.
2. *Chestasanga* (bradykinesia or akinesia) means hindrance or slowness in the movements. *Vyana* actually carries out all the movements, so it is direct cause for

movement like *Utkshepana*, *Apakshepana*, *Akunchana*, *Prasarana* thus disturbance in the function of this *Vayu* leads to disordered movements. *Kapha* by its *Manda*, *Guru* property causes slow all the movements during the process of *Avarana*. *Chestasanga* has been described as symptom of *Pittavritta Vyana* when *Vata* and *Pitta* are in state of reduction, the *Kapha* obstructs the channels and give rise to loss of activity. In *Kampavata* the functions of *Prana*, *Vyana*, *Udana* are impeded by *Avarana* of *Kapha* resulting in *Chestasanga*.

3. *Stambha* means firmly fixed, rigid, stiffness. Spasticity (*Stambha*) is associated with stiffness (*Sthairya*) and coldness (*Saitya*) which are the attributes of *Kapha*. This implies the predominance of *Kapha* in the pathogenesis of this disease. *Stambha* is also a sign of *Avarana* of *Vyana Vata* in compassed by *Kapha* give rise to stiffness of the body.<sup>[9]</sup>

### Pathophysiology of Parkinson's disease:

Ayurveda is a holistic system of medicine considered whole body physiology by explaining the physiology of body in terms of *Tridosha* (*Vata*, *Pitta*, *Kapha*) the three bio-factors. The applied aspect considers *Vata* to represent neuroscience in Ayurveda. It has five major types or components- *Prana*, *Udana*, *Samana Vyana* and *Apana* responsible for neuro-physical functions in the body. Wide form of etiological factors such as tissue degeneration (*dhatu kshaya*) and neuro obstructive diathesis (*marga-avarna*) disturb the equilibrium of *Vata* leading to development of 80 types of *Vata* disorders.

The etiopathogenesis of Parkinson's disease isn't always exactly known yet. Specific etiology of Parkinson's disease is associated with aging and

aging associated neurodegeneration associated with oxidative and nitrosative- stress mediated free radicals. The brain is the most prone organ to oxidative damage. Reactive oxygen (ROS) and nitrogen species (RNS) activate brain's resident immune cells, the microglia, which produce big range of proinflammatory and neurotoxic including cytokines and eicosanoids that eventually induce inflammatory mediated death of dopamine containing neurons. The initial free radical mediated injury in the substantia nigra of the brain followed by programmed cell death may underlie the pathogenesis of Parkinson's disease. There is no specific genetic component involved in most of the cases except mutation in alpha synuclein in some cases of Parkinson's disease. Exposure to environmental chemicals causes damage to brain cells and basal ganglion.<sup>[10]</sup> Parkinson's disease is a disorder of the extra pyramidal system, which includes motor structures of the basal ganglia, and is characterized by the loss of dopaminergic function and consequent diminished motor function, leading to clinical features of disease. The involvement of inflammation in the pathogenesis of Parkinson's disease is also being studied especially the role of cytokines and other mediators. Inflammatory responses secondary to the degeneration of dopaminergic neurons may also play a role in Parkinson's disease and contribute to its pathogenesis.<sup>[11]</sup>

In Ayurvedic classics, the etiological elements of *Vata Vyadhi* described. Parkinson's ailment resembles *Kaphavrita Vyana* and *Udana* in lots of ranges of the sickness. *Chalatva* is the *Karma* of *Vata*. It is being generally contributed through the normalcy in *Gunas* of *Vata Dosha* such as *Rooksha*, *Seetha*, *Laghu* etc. the fractions of *Vata* the *Chesta* and *Gati* is the assets of *Vyana Vata*. The *Bala* is the contribution of *Udana Vata*. In

Parkinsonism, each the features of *Udana Vata* and *Vyana Vata* appears to be deranged. As for the repute of *Doshas*, it's far concerned it is seen that for the symptoms of this disease to manifest, *Vata* is *Vridha* or *Kupita*, *Pitta* is *Ksheena* and *Kapha* is *Vridha* and *Kupita* again. The *Dhatus*, there is involvement of *Rasa* i.e. *Rasakshaya*. The *Updhatus* involved in the pathology are *Snayu* and to an enlarge *Sira*. Here, the *Avrita Dosha* is *Kapha* and the *Avaraka* are the *Udana Vata* and *Vyana Vata*. *Cheshtahani* as well as *Gatisanga* is the feature of *Kaphavrita Vyana* and *Udana*. In the later stages of Parkinson's disease, higher mental functions, mainly memory is impaired and also cognitive and mood disturbances are on the rise. Here we can assume the involvement of *Prana Vata* in the *Samprapthi* in this stage.<sup>[12]</sup>

### Management approaches:

#### A. Prevention

1. Balance food plan is normally recommended. Use *Sali* (old rice), *Godhuma* (wheat), citrus fruit, vegetable, nuts, milk and milk products, nimbu (lemon), mango, orange, apple, peach, garlic, asafoetida, sprout etc.
2. Avoid *yava* (barley), peas, *puga* (areca nut), *jambu*, extra protein diet, hot spicy food and incompatible food articles.
3. Practice regular aerobic exercises, yoga and meditation.
4. Judicious use of anti- psychotics or any other medication under close supervision of doctor<sup>[13]</sup>.

#### B. Medical

Line of Ayurvedic treatment for this situation centers around the treatment of *Vata* disturbance.

1. *Nidana Parivarjana*- modifiable causative factors like environmental toxins, drugs, head injuries, infection should be avoided.

2. *Vangasena Samhita*: for the first time stated the concepts of the treatment of *Kampavata*. It has been asserted that, *Abhyanga*, *Sweda*, *Nasya*, *Niruha*, *Anuvasana*, *Virechana* and *Shirobasti* are the useful measures for the
  - i. *Samsodhana Chikitsa* followed by *Shamana Chikitsa* should be advocated.
  - ii. *Snehana* (oleation): gentle massage with medicated oils such as; *Mahanarayan taila*, *Kshirbala taila*, *Bala taila*.
  - iii. *Sarvange Sveda* (steam bath)/ *Patrapinda Sveda* for 3-7 days.
  - iv. *Nasya Karma* with *Purana ghrita*/ *Narayana taila*/ *Kshirbala taila* 8-8 drops in both nostrils for 7 days.
  - v. *Sirovasti* with medicated oils (s) daily 45 minutes for 7 days.
  - vi. *Sirodhara* with medicated liquids (milk/water)/ oils (*Kshirbala taila*, *Mahanarayan taila*) daily 45 minutes for 7 days<sup>[14]</sup>.

### C. Drug therapy

- i. *Kappikacchu beeja* (*Mucuna pruriens* Linn) 5-10 gm with milk.
- ii. *Ashwagandha* (*Withania somnifera*) 3-5 gm with milk.
- iii. *Brahmi* (*Bacopa monnieri*) 5-10 ml with water.
- iv. *Bala* (*Sida cordifolia*) 5 gm with milk.<sup>[15]</sup>

## DISCUSSION AND CONCLUSION

The assessment without a doubt shows that Parkinson's disease is properly defined in Ayurveda texts, the etiological factors, symptoms, pathogenesis and remedy are properly documented in historic knowledge. Parkinson's disease can be understood in Ayurveda with idea of *Avarana* of *Vata* with *Kapha Dosha*. This review is an attempt and provide an explanation for pathogenesis of

Parkinson's disease at the basis of concepts of Ayurveda for higher analysis and control of Parkinson's disease.

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