



A Review on critical analysis of Parkinson's disease – Ayurvedic perspective

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ABSTRACT

Background: Parkinson's disease is a neurodegenerative condition which affects the basal ganglia. The prevalence (proportion in a population at a given time) of Parkinson's disease is about 0.3% of the whole population. The presentation of the 'Parkinson's disease (*Kampavata*)' will be more common in our country in the future with increase in life expectancy of the population. **Aim and Objective:** To review critical analysis of Parkinson's disease from *Ayurvedic* perspective. **Materials and Methods:** Relevant *Ayurvedic* literature, modern texts as well as the data bases search engines, journal, were used to searched and presented in an organized manner. **Result:** Parkinson's disease is a most common extra-pyramidal degenerative disorder. The majority of symptoms of *Kampavata* are also mentioned in different *Avaranas*, *Charaka* says that *Avarana* of *Vyana* and *Udana* by *Kapha* produces symptoms like *Gatisanga*, *Vakswaragraha*, *Gurugatrata*, *Stambhana* and *Kampanam*. *Kampavata* is correlated with Parkinson's disease which is *Dhatukshyaja*, *Vatavyadhi*, and *Apatarpana* in nature. *Charaka*' in general management of *Avarana* has stressed on *Srotoshuddhi*, *Vatanulomana* & *Rasayana*, *Acharya Vangasena* has mentioned specific treatment for *Kampavata* such as *Abhyanga*, *Swedana*, *Virechana*, *Anuvasana basti*, *Niruha basti* and *Shirobasti*. **Conclusion:** *Ayurvedic Panchkarma* procedures can make life of the patients much easier and drastic increase in their life expectancy of patient.

Keywords: *Avarana*, *Kampavata*, *Panchkarma*, Parkinson's, *Rasayana*

INTRODUCTION

"Parkinson's disease" is a neurodegenerative condition which affects the basal ganglia and which presents with differing combinations of slowness of movement (bradykinesia), increased tone (rigidity), tremor and loss of postural reflexes¹. The modern history of Parkinsonism may be said to have begun in 1817 when '*James Parkinson*' himself a victim, published a small monograph entitled "*An Essay on the Shaking Palsy*".

The prevalence (proportion in a population at a given time) of Parkinson's disease is about 0.3% of the whole population in industrialized countries and has an annual incidence of 0.2/1000. Parkinson's disease is more common in the elderly and prevalence rises from 1% in those over 60 years of age to 4% of the population over 80. The presentation of the '*Parkinson's disease (Kampavata)*' will be more common in our country in the future with increase in life expectancy of the population. This increasing life expectancy of Indians, in the last decade, is likely to result in an increase in age-related diseases like Parkinson and Alzheimer's diseases. The elderly population in developing countries is predicted to increase by 200-280% compared with a mere 30-40% in the developed nations².

Neurological disorders cause significant morbidity, mortality, disability, socioeconomic losses and reduce the quality of life. Few Indian neuro-epidemiological studies have estimated the load of neurological diseases. Nearly, 33 million Indians have neurological disorders and they occur twice as often in rural areas³. Thus, despite methodological differences across various studies and in different settings, Parkinson's disease is a common neurological problem in India.

AIMS AND OBJECTIVES

To review critical analysis of Parkinson's disease from *Ayurvedic* perspective.

MATERIALS AND METHODS

To fulfil the aims and objectives relevant *Ayurvedic* literature, modern texts as well as the data bases Google scholar, PubMed, AYUSH Research Portal, DHARA, studies available on Research Gate web-based search engines, journal, were used to searched topics on OSMF and presented in an organized manner.

RESULT

Ayurvedic Review

According to *Ayurveda*, the majority of *Vata* diseases are nervous system degenerative disorders. The *Nanatmaja* disorders of *Vata* include *Kampavata*, which is compared to

Parkinson's disease. There are no established standards for diagnosing Parkinson's disease. The most prevalent extra-pyramidal degenerative disorder, Parkinson's disease has a wide range of manifestations, but the classic diagnostic signs are: slowness and poverty of movement, stiffness, and shaking.

The Lord *Indra* experienced *Vepathu*, according to the *Rigveda*. It also appears in *Atharvedic* literature under the name *Vepathu* has been classified as having *Nanatmaja* disorder of *Vata* in the *Charaka Samhita*. There are numerous other references to the *Kampa* that go by the names *Vepathu*, *Vepana*, and *Prevepana*. There are some pathological conditions of *Vata Vyadhi* that exhibit the two primary symptoms of the disease, *Kampa* (tremor) and *Stambha*. In *Bhaishajya Ratnavali*, the term *masthishka vepana* is used to establish the relation between brain and tremor.⁴ *Stambha* was listed among the signs of vitiated *Vata* by *Charaka*, who also identified it as a *Snayu* disorder. The circumstances where *Pitta* is reduced and *Kapha* and *Vata* are elevated are mentioned by *Charaka*.

Avaranas of *Vyana* and *Udana* by *Kapha*, according to *Charaka*, produce symptoms like *Gatisanga*, *Vakswaragraha*, *Gurugatrata*, *Stambhana*, and *Kampanam*, which make up the majority of *Kampavata* symptoms. *Shirahkampa* is regarded as one of the most significant illnesses in *Shirah*, and *Nasya* has been used for its treatment. *Charaka* observed tremors in various organs, including the head. In "*Snayu Prapta Vata*," *Sushruta* mentions the symptoms *Stambha* and *Kampa*. Another long-term complication of *Dusivisha* is *Vepathu*. Similar symptoms can also be brought on by excessive use of *katu*, *tikta rasa*, and trauma in *pranavaha srotasa*. In the *Ashtanga Sangraha*, *Kampa* is mentioned in the *Raktakshaya*, *Pittakshaya*, and *Kaphakshaya* conditions. *Kayasya Vepathu* is mentioned as an aging symptom. In the *Vatavyadhi* chapter, *Madhavakara* first described the disease *Vepathu*, which is characterized by *Sarvanga Kampa* (body tremors), and *Shirokampa* (head tremors). The commentator *Vijayarakshita* has further shown that tremors of the limbs may also be included in *Shirokampa*. This shows that, despite being scattered, the key clinical features of *Kampavata* (Parkinsonism) are well documented in *Ayurveda*.

Nidana (Probable etiology) of Kampavata

Charaka and *Bhava Prakasa* clearly mentioned the causative factors of *Vata Vyadhi*, but in *Susruta Samhita*, *Ashtanga Sangraha* and *Ashtanga Hridaya* the causes of *Vata Vyadhi* have not been separately described. However, in these texts the causative factor for provoked *Vata*

Dosa are available *Sushruta Samhita*, *Astanga Samgraha* and *Astanga Hridaya*. Since *Vata Vyadhi* are considered *Nanatmaja* type of diseases of *Vata* the provocative factors of *Vata* can also be taken as the causes of *Vata Vyadhi*.

In addition to this, in *Charaka Samhita*; *Astanga Samgraha* and *Astanga Hridaya*, the specific causes of *Vata vyadhi* i.e. *Dhatukshaya* and *Avarana* have also been mentioned⁵.

All the etiological factors given either of *Vata Vyadhi Prakopa* in the Ayurvedic texts have been reviewed and reclassified into four group viz.

- ✓ *Aharata* (dietetic factors)
- ✓ *Viharata* (Regimen factors)
- ✓ *Agantuka* (External factor)
- ✓ *Anya Hetu* (Miscellaneous factor).

Excessive intake of *Katu Rasa* leads to *Kampa*⁶ and *Kashaya* indulgence produces *Stambha*. *Viruddha Ahara* defiles *Samana*, *Vyana* and *Majja*. *Ruksha* and *Alpa Ahara* are also the causative factors for *Vata* disorders⁷. *Ruksha* specifically vitiates *Prana Vayu* may lead to *Shirah kampa*.

Poorvarupa (Premonitory Symptoms) of Kampavata

Charaka say that *Avyakta Laksana* are the *Purvarupa* of *Vata Vyadhi*. Following may be considered as *Purvarupa* of *Kampavata*⁸.

- ✓ *Angamarda*
- ✓ Anxiety (*Udvega*)
- ✓ *Anavasthita Chittatva*.
- ✓ Disorientation (*Moha*)
- ✓ Forgetfulness (*Smriti hani*)
- ✓ Irritability (*Asvasthanamana*)
- ✓ Pain (*Gatraruka*) ache & pain which may be restricted to one side of the body.
- ✓ Nervousness (*Avasada*) patient felling of tension & restlessness.
- ✓ Paresthesia (*Supti*)
- ✓ Sensation of warm

Rupa (Symptomatology) of Parkinson

Basavaraja has explained the symptoms of *Kampavata* as⁹:-

- ✓ *Karapada Tale Kampa* (Tremor in hand and legs).

- ✓ *Dehabramana* (Whirling sensation or Rombergism).
- ✓ *Nidrabhanga* (Loss of Sleep).
- ✓ *Kshinamati* (Dementia).

The symptom like:-

- ✓ *Stambha* (Rigidity)
- ✓ *Chestahani* (Slowness of the movement)
- ✓ *Vinaman* (Flexed posture)
- ✓ *Vakvikriti* (Speech disorders) have been mentioned in other pathological conditions of *Vata vyadhi* which can also be grouped under the features of *Kampavata*.

Some additional symptoms of Parkinson's disease (*Kampavata*) described in modern medicine are as follows:-

- ✓ Change in facial expression
- ✓ Voice and speech change
- ✓ Sleep disorder
- ✓ Sexual dysfunction
- ✓ Seborrhoea
- ✓ Muscle atrophy
- ✓ Drooling

Probable *Samprapti* of *Kampavata*

Samprapti is the process, which takes place in the body in between *Nidana Sevana* and the stage of *Rupa* of the particular disease (Fig.1 & 2).

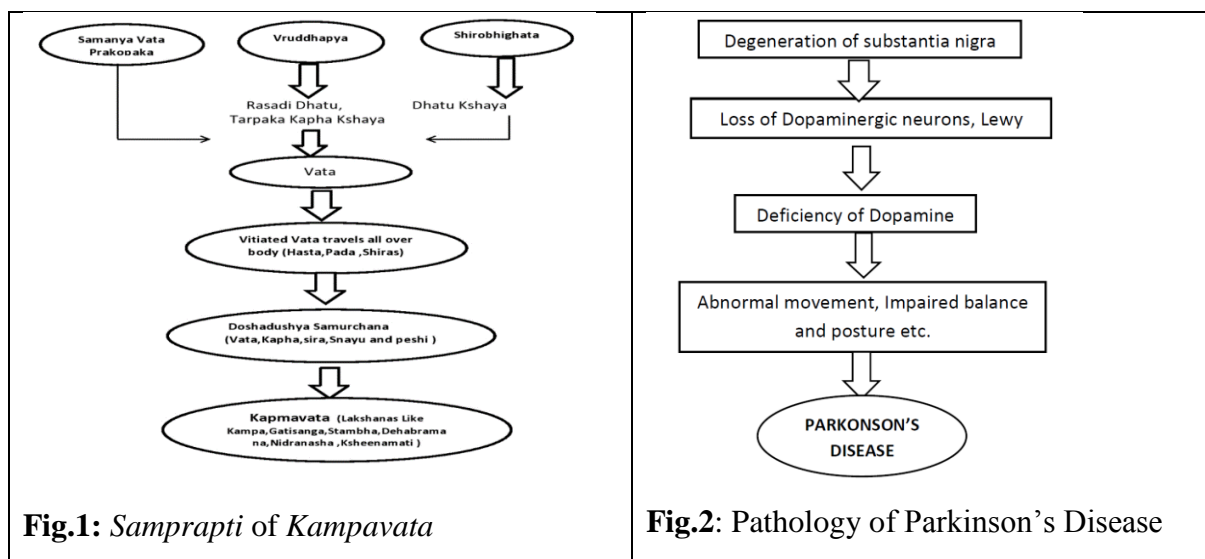
Samprapti Ghataka of *Kampavata*

Dosha, Dushya, Srotasa, Agni, Ama etc. involved are of great importance and are known as *Samprapti Ghataka*. The major factors involved in *Samprapti* of *Kampavata* are as follows (Table 1).

Table 1: *Samprapti Ghataka* of Parkinson

<i>Nidana</i>	<i>Vata Prakopaka Nidanas</i>
<i>Dosha</i>	<i>Vata – All five types especially Prana, Vyana, Udana</i>
<i>Pitta</i>	<i>Sadhaka</i>
<i>Kapha</i>	<i>Tarpakak</i>
<i>Dushya</i>	<i>Rasa, Mamsa, Majja, Shukra</i>

Updhatu	<i>Snayu, Kandara Ojas</i>
Mala	<i>Purisha, Vitsneha</i>
Srotas	<i>Rasavaha, Mamsavaha, Majjavaha, Sukravaha</i>
Srotodushti	<i>Sanga</i>
Agni	<i>Jatharagni</i>
Roga Marga	<i>Madhyama</i>
Udbhava Sthana	Of production – <i>Pakvashaya, ShirasthaMajja.</i> Of manifestation – <i>Sarvanga</i>



On the basis of the above mentioned guidelines the *Samprapti* (Pathogenesis) of *Kampavata* can be explained as follows: -

Due to already mentioned etiological factor, its *Chala*, *Ruksha* and *Shita* properties provoke *Vata dosha*. All the five *Vatas* are involved but *Prana*, *Udana* and *Vyana* are most frequently involved and simultaneously due to *Guru* and *Viruddha* diet *Kapha dosha* gets vitiated. *Udana* is particular important which is responsible for *Prayatna* mediated *Cheshta*.

So all *Cheshta* which need *Prayatna* are diminished due to *Avarana* of *Vyana*. *Udana* vitiated by *Kapha* resulting in *Chestasanga* i.e. slowness of the movement which is the first and foremost symptom of *Kampavata*. Due to excessive use of *Kashaya* and *Tikta* properties and reaches *Shira (Marma)* & consequently impairs the *Shirasthamajja*, thereby causing *Kshaya* (degeneration) of specific *Indriyas* which are concerned with the function *Vak*, *Pani* and *Pada*. However *Marmaghata* may directly lead to the similar pathology. As *Snayu* is closely connected with *Mastulunga* which is its *Moola*, incited *Vata* gets settled in *Snayu* too

(*Snayuprapta Vata*). This vitiated *Vayu* in other way lead to *Rasa Kshaya*. On the other side *Kapha* by its *Manda* and *Sheeta* properties is already in existence. These collective phenomenons results in *Kampa* and *Stambha*. Due to *Chala* property of *Vata* it produces *Kampa*. Increased *Vata* at one site and decreased at other site may be considered as hallmark of process of *Avarana*. *Rasa Kshaya* may further lead to impairment in other *Dhatu*s. *Shirasthamajja* is already impaired, hence *Sharirasthamajja* also gets defaced and creates the obstruction in the *Gati* of *Vayu*. Thus producing the symptoms of *Majjavritta Vata* and *Snayugata Vata*, which are found in *Kampavata*.

Sadhya-Asadhyata

Vatavyadhi has been mentioned as *Mahagada* and it is considered as *Dushcikitsya* i.e incurable by *Acharya Sushruta*¹⁰. *Kampavata* being a one of the disease of *Vata*, is also considered as incurable. *Charaka* while explaining the *Sadhya Asadhyata* of some *Vatika* disease, mentioned that these disorders on account of their deep seated nature may or may not be cured even after careful treatment.

Charaka say that a patient of continuous non-stop tremor with loss of *Bala* has grave prognosis. While *Sushruta* mentions that *Vatavyadhi* associated with *Upadravas* like *Suna* (*Shotha*), *Suptatwacha*, *Bhagna*, *Kampa*, *Adhmana* etc. can never be cured. Patient with all body (tremor) *Kampa*, *Sammoha*, *Mattasyeva*, *Gati* and *Vachana* (falling gait the speech like, drunkened) do not survive more than one month. A patient of *Ardita* who has developed *Animishaksha*, *Prasakta* or *Abhyakta Bhasana* and *Vepathu* is very difficult to cure mentions *Sushruta*. These all conditions appear in the advance stage of *Kampavata* (Parkinson's diseases). If a person who is weak, thirsty and having dryness of mouth is suffering from *Stambha* (rigidity) and upward look of eye and constant *Kampa* (tremor) in many region then he may not survive¹¹. Thus the *Kampavata* (Parkinson's disease) can be listed under the diseases of *Yapya* category (Incurable nature).

Diet and Nutritional guideline for *Kampavata* (Parkinson's disease)

Acharayas have explained some classification of dietetic articles, which are useful in *Vatavyadhi*. As *Kampavata* is one of *Nanatmaja* disorders of *Vata* so far these dietetic articles may be useful for *Kampavata*, which are as follows

Pathya Ahara:-

Annavarga: - *Yava*, *Kulattha*, *Kodrava*, *Raktasali*, *Purana Sasti*, *Sali*.

Sakavarga: - *Vastuka, Sigru, Kara wella, Patola, Surana, Kakamachi.*

Falavarga: - *Draksha, Kushmanda, Amalaki,*

Dugdhavarga: - *Godugdha, Ajadugdha, Mahiidugdha,*

Advaka/ Lasuna sidhha: - *Takra.*

Mamsavarga: - *Kukuta, Lava, Vartak, Shuka, Kapota, Chatak Mamsa.*

Paniyavarga: - *Tapta Niva.*

Apathya Ahara:-

Dadhi, Mastu, Guda, Kshira, Masa, Viruddha-Bhojana, Asatmya -Bhojana, Visamasana, Anupa mamsa, Abhisyanthi, Guru, Picchila Drayvas.

Apathya Vihara:-

Viruddhachesta, Vegavarodha and Jagarana are also *Apathya* for *Kampavata* patients.

Chikitsa of Kampavata

The general line of *Vatavyadhi chikitsa* based on the specific etiology, *Santarpana Chikitsa*, and *Rasayana* should be the focus of treatment. Specific treatments for *Kampavata* have been mentioned by *Acharya Vangasena*, including *Abhyanga, Swedana, Virechana, Anuvasana basti, Niruha basti, and Shirobasti*¹².

Snehana (oleation)

According to *Acharya Charaka*, the first line of defense for all *Vatavyadhis* is *snehana*. Internal *abhyantarya sneha* is attained through *bhojana, pana, nasya, and basti*. *Abhyanga, Mardana, Lepa, Moordhini taila, etc.* are all parts of *Bahya Sneha* (External).

Abhyanga

Aid in ensuring the skin's unctuous softness. The *Abhyakta Sneha's Veerya* will eventually reach the *Uttarottara Dhatus* and have the desired impact. It improves eyesight and skin tone, clears the *Srotas*, increases stamina, boosts blood circulation, delays aging, gets rid of body aches and fatigue, and prevents old age.

Swedana (Fomentation therapy)

Helps in relieving from *Stambha, Guruta* and *Sheetata*¹³.

Virechana

Acharya Charaka has mentioned *Virechana* as a *Sodhana karma* for the treatment of *Vatavyadhis* and *Mridu virechana* with *Snehasamyukta oushadhis* are advised which imparts *Bala* to *Indriyas*, does *Agnideepana* and *Koshtashuddhi*.

Basti karma

Basti is said to be the best treatment for vitiated *Vayu*, which is the chief cause of *Kampa Vata* and through *Basti* all the other disturbed body elements fall into rhythm and equilibrium.

Nasyakarma

Acharya Chakradatta and *Vangasena* have indicated *Nasya karma* for *Kampavata*.

Shiro Basti

It is the most potent form of *Moordhini taila*¹⁴ which helps to alleviate vitiated *Dosha* and does *Indriya shuddhi*. This is mainly indicated for *Shirakampa*. By doing *Shiro basti* and *Shirodhara* patient feels relaxation both physically and mentally. Relaxation decreases brain cortisone and adrenaline level, synchronizes the brain wave, strengthens the mind.

Parkinson's disease (PD) is a relatively selective loss of nigrostriatal dopaminergic cells that is an age-related neurodegenerative disease. The progression of the disease in PD has not been slowed down by current therapies. Parkinson's disease patients are now choosing Ayurveda for treatment due to the long-term side effects of Levodopa and other drugs. *Dhatuvriddhikara*, *Vatashamaka*, and *Sukraviddhikara* are properties of the herbal medicine *Kapikacchu*¹⁵. It protects against the aging process and might help with *Dhatukshaya's* condition. It also restores the *Indriyas'* proper functioning, which is found to be compromised in *Kampavata*. *Zandopa (Mucuna Pruriens)* also contains L-dopa, which has anti-parkinsonism properties¹⁶.

DISCUSSION

Parkinson's disease is the 2nd most common serious neurological condition after Alzheimer's disease. Neurological disorders cause significant morbidity, mortality, disability, socioeconomic losses and reduce the quality of life¹⁷. *Vata* is life (*Prana*) of human kind because it is responsible for all *Cheshtas* i.e. movement. It controls *Tantra* (body) and *Yantra* (organ). *Vata* imparts different *Uchcha* and *Avacha Cheshtas*. Thus deranged *Vata* functions lead to different movement disorders. *Vata* gets vitiated by *Dhatukshaya*, *Avarana* and *Swanidanena Prakopa*. *Chakrapani* explains *Avarana* as “*Vegapratibandha*” and “*Gatihanana*”. *Vegapratibandha* is obstruction to *Vega* or impressed force of *Vata*. *Kampavata* which is *Nanatmaja* disorders of *Vata* subsume *Avarana* on *Vridhha Vata* by *Kapha* in its pathogenesis.

So, also we can trace the symptomatology of *Kampavata* from different *Avaranas* viz. *Kaphavritta Vyana* exhibits as *Gatisanga*, *Daurbalya*, *Gurugatrata* and *Cheshtastambha*. *Kaphavritta Udana* manifests as *Vak Swaragraha*, *Gurugatrata* and *Kampanam*. On the basis of guidelines mentioned by *Vagbhata* mixing of former and later *Avarana* i.e. *Avarana* of *Vyana* and *Udana* by *Kapha* provides pathophysiological understanding of *Kampavata* which manifests mainly as *Cheshtasanga*, *Vakvikriti* and *Gatisanga*. Slowness of movement (bradykinesia) suggests the involvement of *Manda* and *Guru* Property of *Kapha*. *Vata* vitiates by its *Ruksha* and *Shita* properties in this disease producing *Stambha* and *Kampa*.

Parkinson's disease known as *Kampavata* in *Ayurveda*, is a degenerative neurological disorder of central nervous system, mainly affecting the motor system commonly affecting the older age group. *Basavarajiyam* has described detailed symptomatology of *Kampavata* as “*Karapadatalekampa*” (tremors in hands and legs), *Deha Bhramana* (rombergism), *Nidra Bhangha* (insomnia) and *Kshina Mati* (impairment of intellect) which is equivalent to Parkinson's disease¹⁸.

The pathology is caused by the degeneration of a collection of nerve cells known as the substantia nigra, which are located deep within the cerebral center and use dopamine as a neurotransmitter to communicate with other nerve cells. Dopamine is unable to reach the parts of the brain that control motor functions as these cells deteriorate and cease to function. The goal of Parkinson's disease treatment is to replace lost dopamine and stop the degeneration brought on by a *Vata* imbalance. A precursor to dopamine (L-dopa, Levodopa), which will enter the brain, is administered because the blood-brain barrier prevents dopamine from entering the brain from the blood stream. Levodopamine or L-dopa, which can be used as natural levadopa, is found in the seeds of the macuna pruriens plant known as kapikacchu. Parkinson's disease, which is *Dhatukshyaja*, *Vatavyadhi*, and *Apatarpana* in nature, and *kampavata* are related. *Srotoshuddhi*, *Vatanulomana*, and *Rasayana* have been highlighted by *Charaka* as general management of *Avarana*¹⁹. It was incorporated into the disease's treatment plan due to the *Balya*, *Brimhana*, and antiparkinson's properties of *Kapikachhu* and the *Rasayana* properties of *Ashwagandha*.

CONCLUSION

Ayurvedic text provide a clear description of Parkinson's disease (PD). Ancient knowledge has detailed descriptions of the pathogenesis, etiological factors, symptoms, and treatments. The concept of *avarana* of *Vata* with *Kapha Dosha* is unique to the pathophysiology of PD in

Ayurveda. Rasayana, or rejuvenation therapy, is necessary for *Kampavata* (Parkinson's disease). Patients' lives can be significantly improved by *Ayurvedic Panchkarma* procedures, and their life expectancy can be dramatically extended. In order to improve the diagnosis and treatment of Parkinson's disease (PD), this review aims to explain the foundational Ayurvedic principles.

COMPETING INTEREST

No competing interest exist.

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