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Multiple sclerosis an Ayurvedic approach - A Critical View

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ABSTRACT

Autoimmune disease occurs when the immune system attacks self-molecules as a result of a breakdown of immunologic tolerance to autoreactive immune cells. Autoimmune disorders are on the rise globally and affect 8.5% of the population worldwide. Multiple sclerosis (MS), the most prevalent neurological disability is an autoimmune disease of Central nervous system characterized by chronic inflammation, demyelination, gliosis and neuronal loss. Although the aetiology and pathogenesis of MS remains unclear, several studies illustrate that the cause of MS is multifactorial and include genetic predisposition together with environmental factors. Therapies for MS are based on the use of anti-inflammatory and immunomodulatory drugs, but these treatments are not able to stop the destruction of nerve tissue. Hence a comprehensive management programme is strongly recommended for all patients with multiple sclerosis, enhancing health-related quality of life through advocating wellness, addressing aggravating factors, and managing comorbidities. Multiple Sclerosis can be understood as anuktavata vyadhi based on similarity of symptoms as there is no direct correlation in Ayurvedic classics. With immunosuppressant or cortico-steroids as only available treatment in modern sciences, Ayurveda can be ray of hope. The scope of Ayurvedic Management and preventive aspects mainly concentrates on improving the quality of life and decrease dependency by patients on others. Hence here an attempt is made to analyse the disease and its management.

Key words: Autoimmune disease, Multiple sclerosis, Demyelination, Anuktavatavyadhi.

INTRODUCTION

Multiple sclerosis (MS) is a chronic autoimmune, inflammatory neurological disease of the central nervous system (CNS). MS attacks the myelinated axons in the CNS, destroying the myelin and the axons to varying degrees and leads to focal areas of damage, axon injury, axon transection, neurodegeneration,

and subsequent scar or plaque formation. The course of MS is highly varied and unpredictable. In most patients, the disease is characterized initially by episodes of reversible neurological deficits, which is often followed by progressive neurological deterioration over time. MS affects 2.5 million individuals worldwide. It is approximately threefold common in women than men and the age of onset is typically between 20 and 40 years, but the disease can present across the life span. MS also correlates with high socioeconomic status. MS was uncommon in Indian subcontinent, but the widespread availability of MRI has led to an increased recognition of MS in India.^[1]

The cause is unknown, but the risk factors include a combination of genetic susceptibility and a nongenetic trigger, such as a virus, vitamin D deficiency or environmental factors, that together result in a self-sustaining autoimmune disorder that leads to recurrent immune attacks on the CNS.

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Pathogenesis

Predisposing factors such as genetic, environmental and infection triggers the activation of myelin-reactive Th1/17 cells due to which there will be infiltration in CNS further leading to blood brain barrier breakdown. As a result, immune cell recruitment occurs causing CNS tissue damage and neurological dysfunction will be seen.

Types of Multiple Sclerosis

Types of MS are considered important not only for prognosis but also for treatment decisions and include: Relapsing remitting MS (RRMS), Primary progressive MS (PPMS), Secondary progressive MS (SPMS), and Progressive relapsing MS (PRMS)

▪ **Relapsing/remitting MS (RR-MS)**

Relapsing/remitting MS (RRMS) accounts for 85% of MS cases at onset and is characterized by discrete attacks that generally evolve over days to weeks (rarely over hours). With initial attacks, there is often substantial or complete recovery over the ensuing weeks to months, but as attacks continue over time recovery may be less evident. Between attacks patients are neurologically stable

▪ **Secondary-progressive MS (SP-MS)**

Secondary-progressive MS (SPMS) always begins as RRMS. At some point, however, the clinical course changes so that the patient experiences a steady deterioration in function unassociated with acute attacks. For a patient with RRMS, the risk of developing SPMS is ~2.5% each year

▪ **Primary-progressive MS (PP-MS)**

Primary-progressive MS (PPMS) accounts for ~ 15% of cases. These patients do not experience attacks but only a steady functional decline from disease onset.

▪ **Progressive/relapsing MS (PR-MS)**

Progressive/relapsing MS (PR-MS) accounts for ~ 5% of cases. These patients experience a steady deterioration in their condition from disease onset along with occasional attacks superimposed upon their progressive course.^[2]

Symptoms and signs of MS^[3]

Site of demyelination	Symptoms	Sign
Spinal cord	Limb weakness Lhermitte’s symptom Stiff legs Sensory impairment Erectile dysfunction Urinary frequency and retention Constipation	Spasticity Pyramidal weakness Hyper-reflexia Absent abdominal reflexes Extensor plantars
Brain stem	Ataxia Diplopia Dysarthria Dysphagia Facial numbness/weakness	Internuclear ophthalmoplegia Nystagmus Gaze palsies Facial sensory loss Rubral tremor
Cerebellum	Unsteady gait and slurred speech	Gait and limb ataxia Dysarthria Nystagmus
Optic nerve	Unilateral visual loss and painful eye movements	Relative afferent pupillary defect Lost colour vision/acuity Optic atrophy (late sign)
Cerebrum	Poor memory Personality change Epilepsy	Dementia (subcortical)

Diagnosis

- No definitive diagnostic test for Multiple sclerosis
- Two or more episodes of symptoms and two or more signs that reflect pathology in anatomically noncontiguous white matter tracts of the CNS (Diagnostic criteria for multiple sclerosis 2010 –McDonald criteria)

Investigations

- MRI scans of the brain and spinal cord, which may reveal lesions
- Spinal fluid analysis, which may identify antibodies that suggest a previous infection
- Evoked potential test, which measures electrical activity in response to stimuli

Treatment

Therapy for MS can be divided into three categories

1. Treatment of acute attacks
2. Treatment with disease modifying agents that reduce the biologic activity of MS
3. Symptomatic therapy.

Treatments that promote remyelination or neural repair do not currently exist. The Common side effects include headache, diarrhoea, back pain, cough, and abnormal liver tests and may lead to progressive multifocal leukoencephalopathy (PML), a rare brain infection.^[4]

Ayurvedic perspective

In MS, the immune system attacks the protective sheath (myelin sheath), which is a lipid-rich (fatty) substance that surrounds nerve cell axons can be understood as Snayu formed from medas (medasahasnayusambhavaha).^[5] The explanation which resemble multiple sclerosis is not accessible specifically as separate disease entity in any of the major Ayurvedic texts. Any disease related to nervous system of the body can be considered in the umbrella of 'Vata Vyadhi'. Vata dosha having its main lakshana as *gati* (movement) and *gandhana* (knowledge perception) are generally attributed to nervous system of contemporary science exhibiting the same functional properties. Among *tridoshas* the supremacy of *vata* is explained by all our *Acharyas* as "pittam phangu kapham phangu phangavo mala dhatavah, Vayuna yatra niyante tatra gacchati meghavat".^[6] Vata when unvitiated holds up the systems and organs, initiates movements, leads and controls mind, helps in proper functioning of organs,

carries sense objects. So, when this *vayu* become vitiated, it leads to abnormal condition.^[7]

Nidana and Samprapti

The nidana can be either *dhatu kshaya* or *aavarana* leading to its respective pathogenesis.^[8] In *dhatu kshaya* condition *vata* *kara* Nidana *Sevana* produces *Vata Prakopa*.^[9] The concept of autoimmunity can be understood under the purview of *aama* which leads to *aavarana* and later *dhatu kshaya*. *Aama* is incompletely digested metabolic substances. At an early stage *Ama* can be easily cured, but as this condition persists for an extended period of time it hinders the physiological channels of the body, slows down the metabolism that result again in more production of *Ama*. In the initial phase, when the *Ama* is in the larger body channels, body try an alternative way to get rid of the toxins. However, in case of chronic conditions or if there are repeated suppression of *Ama*, toxins get accumulated deep in the cells and when the level of tissue has penetrated, immune system starts to attack the affected cells. This causes inflammation or allergic reactions that without proper treatment can lead to auto-immune diseases.^[10]

Nidana *sevana* → *Dhatu kshaya* and *Margavarana* → leads to *Vataprakopa* → causes *Sthanasamshraya* in *Snayu* → and causes *Vatavyadhi*.

The lakshanas of *vatavyadhi* are *Sankocha* (contraction), *stambhana* (stiffness), *shoola* (pain) in the joints as well as in bones, *graha* (spasticity) of hands, back, *Khanja* (lameness) and *pangulya* (total paralysis of leg) and *kubjata* (lunch-back), *sosha* (atrophy) of body parts, *anidra* (insomnia), *Spandana* (trembling of body), *gatrassuptata* (numbness), *bheda* (breaking pain), *toda* (pricking pain), *akshepaka* (convulsion), *kampana* (trembling), *anaha* (flatulence), *malaparodha* (obstruction to faeces), *balaindriya bhramsa* (loss of strength and sensory function), *pralapa* (incoherent talk), *bhrama* (giddiness) and various other symptoms based on *hetu* and *sthana*.^[11]

The inherent natural qualities and actions of *vata* such as *roukshya* (roughness), *gati* (movement), *anavasthithatvam* (instability) are obviously

manifested partially or wholly which helps to diagnose the vatika type of disorders. Based on these qualities and actions of vata the disease can be classified under the heading of vatavyadhi even though if it has not been specified as vatavyadhi.^[12] As multiple sclerosis cannot be compared to any predescribed condition in Ayurveda it can be considered as anukta vatavyadhi.

Chikitsa

The chikitsa to be based on the cause whether it is due to dhatu kshaya or aavarana.

Dhatu Kshayajanya Vatavyadhi Chikitsa^[13]

- **Snehana** - bahya - abhyana, abhyantara - snehana
- **Snehapoorvaka Swedana** - Mashapinda Sweda, Shashtikashali Pinda Sweda, Nadi Sweda, Prastara and Sankara Sweda.
- **Mridushodhana** - Snigdha Virechana
- **Basti** - Yapanabasti.
- **Nasya** - Brimhananasya

Avaranajanya Vatavyadhi Chikitsa^[14]

Treatment of Avarana should aim towards cleansing the srotas with different medicaments which possess Anabhishtyandi, Snigdha, Kaphapitta Aviruddha and vatanulomana property. Administration of Yapanabasti, Sramsanchikitsa and Rasayandraya may be considered after analyzing the bala of patient and the stage of disease. Different varieties of Panchakarma treatments are planned in order to remove the obstruction and bring Vata to its own path.

- **Maasthikya chikitsa** - Murdhni Taila i.e. Shirobasti, shiropicchu, shirodhara, shiro abhyanga and Shiro thalam can be adopted.^[15]
- **Aushadha Yogas which can used are**

Kashaya	Bhadradarvyadhi Kashaya Dhanwantaram Kashaya Astavarga Kashaya Maharasnadi Kashaya
Choorna	Ashwagandha choorna

	Balachoorna Guduchisatva Amalaki + yastimadhuchoorna
Asava/Arista	Balarista Ashwagandharista Devadarvyarista Nalikerasava Dashamoolarista
Taila	Prabhanjanavimardhanataila Mahanarayanataila Balashwagandhataila Ksheerabalataila Mahamashataila Dhanwantaramtaila
Ghrita	Ashwagandhadigritha Vidaryadigritha Rasnadigritha Chagalyadigritha
Rasayana	Ashwagandha rasayana Vidaryadhilehya Amalakirasayana
Bhasma	Abraka bhasma Rajata bhasma Swarna bhasma
Rasoushadhi	Panchamruthalohaguggulu Bruhatvata Chintamani rasa Mahavataavidwamsaka rasa Vatagajankusha Rasa Rasaraja rasa Swarna malinivasantha rasa

DISCUSSION

Multiple sclerosis is a potentially disabling disease of the central nervous system affecting the Brain, spinal cord and optic nerves. Medications such as steroids,

glucocorticoids and Interferons are advised in MS, however the adverse effects such as fluid retention, potassium loss, weight gain and hepatotoxicity are observed. Though there is no definite cure, treatment may relieve the symptoms and are partially effective. Multiple sclerosis is a neurological disease where there will be demyelination taking place. As it is a demyelinating disease it can be correlated to Dhatu Kshayajanya Vata Vyadhi. As it is a Auto immune disorder, the main cause for this can be taken up as Aama in Ayurveda and hence there may be Avarana pathology which may ends up with Dhatu Kshayajanya Vata Vyadhi. Hence it can be considered as Anukta Vata Vyadhi. Different treatment modalities like Shodhana, Shamana and Rasayana can be planned based on Nidana, Avastha and Lakshanas of Vyadhi.

CONCLUSION

The definite cause of multiple sclerosis is unknown, it can be understood as one among autoimmune diseases and there is no exact treatment protocol in contemporary science. Based on the symptoms it can be correlated to Anukta Vata Vyadhi. By adopting Vata Vyadhi Chikitsa we can able to prevent the further deterioration of condition and improve the quality of life.

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