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ANALYSING MULTIPLE SCLEROSIS IN AYURVEDA

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ABSTRACT

INTRODUCTION AND BACKGROUND: Multiple Sclerosis (MS) is a disease characterized by a triad of inflammation, demyelination, and gliosis. It is a debilitating disorder due to its progressive nature. The probable causes may be hereditary, environmental and autoimmune. It covers a wide spectrum of clinical features like pain, weakness and diminished sensation of different parts of body, deficit of senses, affliction of muscle tone, power and coordination, speech difficulties etc. It is a herculean task to manage such syndromes. Ayurveda stands unique in such progressive incapacitating diseases by improving the Quality of Life especially HRQOL. Health-related quality of life is an important factor for evaluating the effect of interventions, which can be achieved following Ayurveda principles. The time-honored panacea – Ayurveda has a scope in this regard in improving the quality of life of the ailing community. **METHODOLOGY:** Reviewing the literature, published articles and available case sheets. **RESULT:** It is observed as a single disease having multiple dimensions. It is difficult to cure the condition; the HRQOL can be improved through Ayurveda management. To achieve this, the concept of *Vikalpa Samprapti*(Etiopathogenesis) and *Anukta Vyadhi*(Disease which are not explained in Classics) aids. **DISCUSSION:** *Vikalpa Samprapti* is important in understanding and detailing any *Anukta Vyadhi*. The site of affliction and clinical features are the only evident facts making the disease complex to understand and manage. Ayurveda identifies each disease based on *Samprapti Ghatakas(*Components in disease manifestation*)* and approaches each individual based on *Rogi Pareeksha(*Examination of patient*). Avalambhaka, Tarpaka, Sadhaka, Udana, Vyana,* and *Apana* have their *Adhishtana (*abode*)* and function close to the *Shirohridaya*, which also controls the *Madhyama Rogamarga*. This *Sthana* along with the aforesaid controls the higher mental function, motor sensory

function, which gets impaired on *Dosha Dushti* along with *Dhatu Paaka*, makes the *Roga* progressive and an incapacitating morbidity.

Keywords: Multiple Sclerosis, *Vikalpa Samprapti, Shiro Hridaya*, Quality of Life, *Avalambaka Kapha*

INTRODUCTION

Multiple Sclerosis is a debilitating progressive disorder. It is approximately twice as ordinary in women as in men. The age of onset is typically between 20 and 40 years. The onset may be abrupt or insidious. A triad of inflammation, demyelination, and gliosis characterizes it. The course can be relapsing, remitting, or progressive[1]. The probable causes may be autoimmune, hereditary, and environmental factors. Due to these reasons, the myelin sheath of CNS neurons will be destroyed. The destruction of myelin sheaths slows and then short-circuits the propagation of nerve impulses.[2] It covers a broad spectrum of clinical features like pain, weakness, diminished sensation of different body parts, deficit of senses, affliction of muscle tone, power, coordination, speech difficulties, etc. The epidemiologic, demographic changes have resulted in alteration in health status. This dramatically increased the prevalence and incidence of many chronic debilitating disorders like Multiple Sclerosis. Multi morbidity in the disease produces physical and mental health deterioration. It is a herculean task to manage such syndromes. Ayurveda stands unique in such progressive incapacitating diseases by improving the Quality of Life especially HRQOL. Health-related quality of life is an essential factor for evaluating the effect of interventions, which can be achieved following Ayurveda principles.

Methodology:

Objective: To find out the *Vikalpa Samprapti* of *Anukta Vyadhi*'s Multiple Sclerosis

Source: Scholarly articles, Ayurveda and Modern textbooks, Case sheets

Method: From the evident facts i) Site of affliction – CNS and Spinal cord ii) Clinical features, develop a *Vikalpa Samparapti* for an effective treatment plan to improve the quality of life in Multiple Sclerosis patient

Observation:

The causes of autoimmune, hereditary, and environmental factors are still undisclosed. However, the pathogenesis produces demyelination of neurons in the CNS- brain and spinal cord. Mis programmed T cells that are cytotoxic recognise the CNS neuron, release cytokines that stimulate T cell proliferation, and activate macrophages. Activated T cells and macrophages release proinflammatory mediators and cause cell destruction.[3] This causes a type IV hypersensitivity inflammatory reaction on the myelin sheaths. The complement system also gets activated, and a high level of cytokine presence attacks the oligodendrocytes and astrocytes thus degeneration of the myelin sheath and disruption of the blood-brain barrier happen, respectively. Simultaneously, it triggers the microglial cells and macrophages that scavenge the myelin debris. As lesions evolve, glial cells proliferate, called gliosis. Surviving oligodendrocytes may partially remyelinate the surviving naked axons, producing shadow plaques[4]. Based on the site of affliction, it is evident that the *Adhistana* is *Shiro Hridaya*, which comes under *Tri Marma* and *Madhyama Rogamarga*[5], controlling the higher mental function and sensory-motor function. So, the CNS can be considered as S*hiro Hridaya*, which is getting a continuous supply of oxygen, glucose, and other nutrients from the *Uro Hridaya* by the name *Rasa Poshaka Dhatu*. *Avalambaka Kapha*, situated at *Uras* supporting other *Kapha Sthana*, does *Ambu Karma* by *Anna Veerya* and *Trika Veerya*[6]. On analysis *Trika* is the area where three bones articulate together may be back, thorax and shoulder area, signify thoracic duct having lymphatic vessel loaded with immune cells and chyle carrying fat globules shows the dominance of *Medo Dhatu* in the cellular level. From *Rasa* of *Uro Hridaya*, the lymph and chyle is formed. Unwholesome food and activities produce *Dushita Rasa*

Dhatu. This *Dushita Anna Veerya* on interaction with *Trika Veerya* having immune cell, trigger the auto antigen destruction tendency of immature T cells in blood, resulting in inflammation. This complement cascade can be considered *Dhatu Paka*, cross BBB aggravating the *Vata* and *Pitta Ushma.* Phospholipids- ethanol, amine plasmalogen, and sphingolipids are lost from white matter of the CNS, and an increased quantity of phospholipids in CSF[7] shows severe *Medo Dushti* and *Medo Dhatwagni Mandya*. Prolonged *Dhatu Paka* results in *Avalambaka Dhatu Kshaya* and increases *Kitta Bhaga* forming plaques. On normalcy, *Prana Vayu* located at the head has the control of *Buddhi* (higher mental function), *Indriya* (motor sensory function), and *Chitta* (voluntary, involuntary function), carries out the function of swallowing, breathing, spitting, etc., which is seen impaired in MS. *Udana Vayu Dushti* results in speech disturbances memory impairment fatigue which does its *Karma* along the *Prana Vayu* pathway. Muscle cellular fatigue is seen due to transmission failure in the neuromuscular junction. Fast contraction, Acetylcholine variation, fall of Ph, lactic acid accumulation and glycogen exhaustion can be the reason for this[8]. Fatigue and muscle weakness are where an overall activity level is reduced, resulting in disused atrophy. This also can result in gait abnormalities, tripping, and falls in MS. Here, the *Udana Vayu Avarana* controls the function of *Vyana Vayu* in *Vyakta Sthana*, thus *Karma Hani* in limbs. Pain and impaired sensation are most frequently reported in limbs and lumbar region. It can be paraesthesia, electric shock sensation (Lhermitte's sign), deep muscular aching etc[9]. As *Avalambhaka Kapha* nourishes, the other *Kapha Sthana* in the body undergo *Kshaya*, which aggravates *Vata*, resulting in impaired sensation and pain. *Vata Prakopa Lakshanas* are evident in such conditions.The most common objective sensory abnormalities in MS are impaired vibratory sense, with a decrease in figure writing followed by position sense deficits. Superficial sensations are less involved than deep ones. 40-60% suffer from cognitive decline in attention, processing speed, and working memory. Patients with cognitive resilience but severe disability have pronounced spinal cord involvement, either cervical thoracic, etc. Low cognitive performance & mild disability likely have more distinct brain atrophy and higher brain lesion load with less spinal cord involvement[10]. Thus, *Vyana Dushti* impairment is more in the first case, and *Udana Vata, Sadhaka Pitta* higher mental function controlling faculties impairment in the second case shows the *Tara Tama Bhava* in *Vikalpa Samprapti*. 75% of MS patients suffer from bowel and bladder dysfunction. The bladder and rectum share an embryologic origin and are closely related in their autonomic and somatic innervation. Bladder dysfunction symptoms seen are urgency, frequency, and urge incontinence due to bladder overactivity and incomplete emptying. Bowel dysfunction symptoms seen are fecal incontinence and constipation[11]. The nerve control of muscles at *Apana* the *Vyakta Sthana* is impaired, resulting in *Mala Mutra Sanga*, a neurogenic dysfunction. All *Lakshanas* signify *Avarana* results in *Vata Karma Vridhi* or *Hani*. Understanding of *Vata Kupita Lakshana* in MS is tabulated in table 1.

Table 1:

Clinical feature of MS	Ayurveda correlation	Explanation in samhita
Weakness	*Sramsa Prayatna Hani*	*Saithilya* is a *Vata Prakopa Lakshana, Padartha Graha Karya Udyama* of *Udana Vayu* function affected, further affecting *Vyana Vayu*
Spasticity	*Vestana*	*Grathanam Iva Angasya in Vata Prakopa Lakshana*
Bowel bladder dysfunction	*Sanga Mutra Pureesha-yo Swa Ashaye*	Seen in *Udana Vayu Dushti*, further affecting *Apana Vayu*
Myalgia	*Ruk*	*Satatam Soolam,* due to *Avalambhaka Sleshaka Kapha Kshaya* and *Vata Prakopa*
Speech impairement	*Vakparvrutti Hani*	*Vak Sanga* told in *Udana Vayu Dushti*
Sensory impairement	*Swapa*	*Sparsha Ajnanam* in *Vata Prakopa Lakshana*
Pain	*Vyadha*	*Taadana Iva pain Lakshana* in *Vata Prakopa* and *Avalambhaka Sleshaka Kapha Kshaya*
Memory Impairment	*Smriti Kriya Hani*	Seen in *Udana Vayu Dushti*
Dysphagia	*Anna Praveshakrut*	Seen in *Prana Vayu Dushti*
Fatigue	*Oorja Utsaha Hani*	Seen in *Udana Vayu Dushti*

Result:

In MS, *Kapha Kshaya* and *Vata* dysfunction is observed. The *Adhistana* is *Shiro Hridaya* and *Moola Sthana* of *Roga* is *Uro Hridaya*., as *Dushita Rasa* is the basic culprit. Based on *Vikalpa Samprapti Avalambaka Kapha, Prana Udana Vayu, Sadhaka Pitta Dushti* affect the function of *Vyana Apana Vayu* in *Vyakta Sthana* results in clinical features.

CONCLUSION

Due to *Apathya Ahara vihara or Beeja Dushti*, *Saama Rasa* production affects the *Uro Hridaya*, the *Moola* of *Rasa Vaha Srotas*. This triggers the T cell and complimentary system, producing inflammation and destruction of myelin sheath, which can be considered as *Dhatu Paaka*. *Dhatu Paaka* causes *Kshaya* of *Avalambaka kapha* and aggravation of *Vata* by *Dhatu Kshaya* along with increased *Ushma* of *Pitta.* They are further increasing *Dhatu Paaka* and plaque formation, causing *Margavarana. Dhatu kshaya* and *Margavarana* together cause a high degree of aggravation of *Vata*, impairing the other bodily *Vata* function. This state can be considered as *Anyonya Avarana*. *Medo Dhatwagni Dushti* is evident from increased phospholipids in CSF and destruction of myelin and oligodendrocytes in phospholipid origin cells. Understanding and assessing the *Tara Tama Lakshana* of *Dosha* helps in the selection of medication on a *Guna* basis. Thus, the treatment focuses on correcting *Rasa Dushti, Vatahara, Pitta Ushma Hara*, Sotha hara, arresting *Dhatu Paaka*, and increasing *Prakruta Kapha.*

SCOPE OF STUDY: Understanding and assessing the *Tara Tama Lakshana* of *Dosha* helps in the selection of medication on a *Guna* basis. This paves the way to improve the quality of life through Ayurveda in MS rather than progressing to a debilitating condition.

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