

AYURVEDIC PROTOCOL FOR THE MANAGEMENT OF WILSON'S DISEASE – A CASE REPORT

Priya Pantel^{1*}, Swati Nagpal²

¹PG Scholar, Department of Kayachikitsa, Pt. Khushilal Sharma Govt. (Auto) College & Institute, Bhopal (M.P.) 462003, India

²Reader, Department of Kayachikitsa, Pt. Khushilal Sharma Govt. (Auto) College & Institute, Bhopal (M.P.) 462003, India

Corresponding Author: dr.priyapantel11@gmail.com

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ABSTRACT

Wilson's disease (hepatolenticular degeneration) is a rare important autosomal recessive disorder caused by dysfunction of the copper transporter ATP7B, which leads to snagging in copper transport by the hepatic lysosomes resulted in the deposition of copper in the brain, liver, kidney, or skeletal system. The symptoms are jaundice, Kayser-Fleischer rings, dysarthria, ataxia, and muscle spasticity etc. Current therapeutic modalities for the management of Wilson's disease include zinc, trientine, penicillamine etc. In *Ayurvedic* classics there is no exact correlation is available for this disease entity that exactly matches the feature of Wilson disease, but it can be correlated with *Vatavyadhi* under the *Sahaja Vyadhi (Heredity)* or *Janamjata Vyadhi (congenital)*. The treatment¹ mentioned for *Vatavyadhi* is *Snehana* (oleation), *Mrudu Swedana* (mild sedation), *Anuvasana Basti* (oil enema) and *Niruha Basti* (Decoction Enema). **Material and methods:** An 18-year-old male patient with Wilson disease complained of short stepping gait, persistent constipation, tremors, changed speech, generalised stiffness, and frequent eye blinking. S. Ceruloplasmin was found to be 18.33 mg/dL (usually 20 mg/dl to 40 mg/dl), S. copper was found to be within normal limits, and a slit lamp assay for the KF ring was negative. Ayurvedic therapy was used in conjunction with oral medicine throughout the treatment. **Results:** Clinical observations revealed that the patient's earlier symptoms had significantly improved, and he was able to carry out his usual activities with ease. **Duration of treatment:**

three months. **Conclusion:** From the case study it can be concluded that the *Ayurvedic* medications and *Panchkarma* therapy in such patients may help in providing supportive care and improving the quality of life.

Keywords: *Vatavyadhi, Shaman Chikitsa, Bastikarma, Wilson's disease.*

INTRODUCTION

Wilson's disease is an inborn error of metabolism owing to toxic accumulation of copper in vital areas including the liver, Brain, Cornea and other tissues. All siblings of the patient should be examined to detect the possibility of asymptomatic WD². Wilson's disease is caused by the inheritance of two defective copies of the ATP7B gene from the parent gene. WD might manifest as hepatic, neurologic, or mental issues in both men and women. A build-up of copper in the central nervous system causes neurological symptoms such as tiredness, anorexia, and jaundice, according to Kayser-Fleischer syndrome, rings, edema in legs, ascites, dysarthria, dysphagia, ataxia, dyskinesia and muscle spasticity. It is prevalence^{3,4} of around 0.5 cases per 100,000 inhabitants.

Diagnostic test:

Order a ceruloplasmin level if you are suspicious of WD. It will be less than 20mg/dl (typically 20mg/dl to 40mg/dl) and urine copper levels will be higher than 100 mcg/dl, both of which are considered diagnostic criteria for WD. The existence of Kayser-Fleischer^{5,6} rings may generally be detected with a slit-lamp examination of the eyes, but the absence of Kayser Fleischer rings does not exclude the diagnosis of WD, even in patients with predominantly neurological disease (Class I, Level B). It may be absent in 5% of cases. A liver biopsy is also done in certain individuals for copper analysis to confirm the diagnosis of Wilson disease.

There are two types of treatment: (i) induction therapy and (ii) maintenance therapy. The goal of induction treatment is to lower copper levels below the hazardous threshold. This stage generally lasts between 4 and 6 months. Chelation treatment with D- penicillamine or trientine is commonly used. The goal of maintenance treatment is to keep a slightly negative copper balance to avoid copper buildup and toxicity. Zinc can be used for this therapy because of its reduced cost and

safety profile⁴. Pharmacotherapy must be continued throughout one's life. Due to the ineffectiveness of anti-copper medicines, liver transplantation is the only effective therapy for severe liver disease.

There is no specific definition of the disease entity in Ayurveda that is identical to WD, however certain symptoms are comparable to *Vatavyadhi Lakshnas*. When vitiated doshas deprive Beeja (ovum or sperm) and Beejabhaga (chromosome/gene) during *garbhakala*. *Garbh's* organ will get malformed. (Ch.Sha.30/4) As a result, Beeja-doshjanya Vikara, *Sahajavyadhi*, and *Vatavyadhi* may be linked to Wilson's illness.

Case Report

The present case study was of an 18-year-old male patient with complaints of short stepping gait, chronic constipation, tremors, altered speech, generalized stiffness and frequent blinking of eyes. The associated complaints were pain in multiple joints, Chronic constipation-1times/3days for 2 years, mood swings and poor appetite. The patient was said to be healthy 5 years back and then Symptoms were gradually developed and progressive. In 2015 patient diagnosed with Wilson disease. immediately he started allopathic treatment (Tab. zinc & Tab. Epilan twice a day etc.) but parents didn't observe any improvement. So, treatment was stopped, and the patient was brought to KC. OPD (on dated 5/01/2021) at Ptkls ayurvedic Hospital, Bhopal with the above complaints.

History

Gross motor and fine motor skills were normal, and the last social milestone was also typical for age. Language skills were likewise normal, and there was no history of Delayed Milestones as evidenced by verbal evidence from parents.

Birth History

Birth history revealed that the child was born as a premature baby with an average birth of 2.6 kg through

normal Vaginal delivery, cried soon after birth and no NICU stay.

Immunization history

All the essential vaccines were given according to schedule.

Table 1: General examination

Pulse	BP	RR	Temp.	Body wt
72/min	120/80mmHg	18/min	98.6 F	45kg

Systemic examination-All vitals were normal.

Diagnosis: Wilson's Disease as this case had one of the hallmarks of WD i.e Bilateral Kayser – Fleischer Corneal rings (KF Ring), then followed by the investigation of Urine Copper in 24 hrs. – 448 microgram/24 hours which was increased and the diagnostical CT brain impression was confirmed with Wilson Disease which concluded from a differential diagnosis like

Chronic liver disease, Parkinson's disease, multiple sclerosis.

Investigations: CT scan of Brain (22/10/20) shows the symmetrical area of altered signal intensity showing blooming of GrE involving bilateral basal ganglia and dentate nucleus. Hyperostosis frontalis interna.

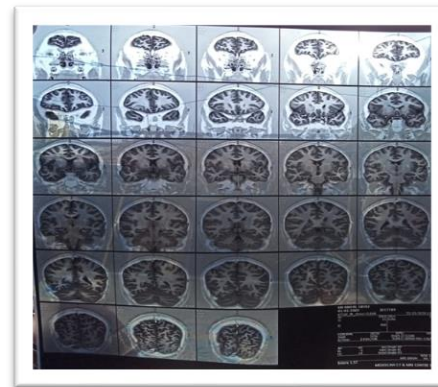


Figure 1- CT scan of Brain

Treatment Protocol

Table 2: Oral Medication

Sr.N.	Drug	Dose	Anupan	Duration
1	<i>Chitradi vati</i>	2* TDS	-	15days
2	<i>Laghmalini Basantrasa</i>	125mg* BD	Water	30days
3	<i>Swadishta virechana churna</i>	5gm* HS	Lukewarm water	60days
4	<i>Agnitundi vati</i> ⁷	1* BD	Water	45days
5.	<i>Panchkola Phanta</i>	20*ml OD	-	45days

Table 3: Panchakarma Therapy

S.N.	Karma	Dravya	Kala
1	<i>Matra Basti</i>	<i>Sahcharadi Tail</i>	45days
2	<i>Sarwang patra pinda swedana</i>	<i>Maharayan Tail</i>	60days
3	<i>Shirodhara</i>	<i>Jatamansi Kwath</i>	90days

Observations & Results

On clinical observations, the patient got relief in joint pain, Chronic constipation, blinking of eyes and anorexia in their 15 days of treatment. So, the treatment plan had been modified for better management then *Matra Basti* was Introduced. After 90 days of treatment, there was a significant improvement in the previous condition.

DISCUSSION

Swadishta virechan churna is used for *Mridu Virechana* for the removal of *Pitta Dosha* and constipation. Initially, to treat *Agnimandya*, *Chitradi Vati* & *Panchkola Phanta* was given for *Deepana Pachana* action. Above Formulation, combinedly targeted digestive system and prevent adhesion of the channels and patient got relief from constipation.

Because *Snehana* (Oleation), *Swedana* (Sudation), and *Basti* (Oil Enema) have been cited as the best treatments for *Vataja* disease, *Patra Pinda Swedana* was

planned together with *Matra Basti (Sahcharadi Taila)*. *Stabdhatata* (stiffness) was caused by *Vata's Sheeta* (cold) *Ruksha* (dry) properties, whereas *Bala's Snigdha* (unctuous) and *Bruhmana* (nourishing) characteristics, as well as *Taila's Ushna Guna*, served to calm *Vata Dosha* and therefore relieve polyarticular pain and stiffness. *Matra Basti* opted with the drug that was having *Vatashamak* effect, so the patient got much relief in such complaints i.e. frequent blinking of eyes, tremors. Due to lipid-soluble content present in *Panchendriyavivardhna Taila*, it gets absorbed by the nasal olfactory cilia and stimulates the olfactory nerves which relate to the higher centers of the brain. *Medhya* and *Vata-Kapha Shamaka* properties of *Panchendriyavivardhna Taila* may give a synergistic action helping to correct the mental and intellectual functions. *Shirodhara* is a classical *Ayurvedic* procedure in which medicated *Dravya (Jatamansi)* steadily dripping on the centre of the forehead of the patient. It induces a relaxed state of awareness which results in a dynamic psychosomatic balance⁸. As evident from the results of the present case study, the selected treatment modality helped in reducing the above-mentioned complaints. Repeated sittings of intervention and advanced *Panchakarma* procedures may be necessary to completely modify the pathogenesis and cure the condition completely which was not done in the present case study as because of a covid pandemic the patient further did not come for the next treatment plan.

CONCLUSION

The present case study was an exploration of a unique and rare case of Wilson's disease diagnosed as *Vatavyadhi* under the *Sahaja Vyadhi(heredity)* or *Janamjata Vyadhi (congenital)* with specific *Vatahara Chikitsa*. Ayurvedic approach and diet modification have shown good results in reducing symptoms. From this case study, it could be concluded that WD may be correlated with *Vatavyadhi* and above treatment protocol gives much better results in future. No such adverse effect observed during treatment in this patient.

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