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Case Study

AYURVEDIC MANAGEMENT OF ALCOHOL USE DISORDER - A CASE SERIES

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ABSTRACT

Alcohol Use Disorder (AUD) is a medical condition characterized by impaired ability to stop or control alcohol use despite the adverse social, occupational, or health consequences which ranges from mild to severe. AUD includes symptoms of alcohol intoxication, withdrawal as well as dependence. Etiological perspective applies a bio psychosocial framework that emphasizes the interplay of genetics, neurobiology, psychology and individual's societal context. Globally around 1.4% of the population have AUD and 3 million deaths result from harmful alcohol use each year. Contemporary management includes medical intervention, counselling, outpatient program, or a residential inpatient stay, but the relapse rate is high. Hence the medical world is focusing on indigenous medicine and its probable outcome in the management of AUD. **Objectives**: In Ayurveda, the context of *Madatyaya* refers to conditions resultant from improper and excessive usage of alcohol and even other substance use. Every patient is being examined thoroughly as per Ayurveda parameters and based on the observations as well as the severity; individualized protocols are being framed. The case series includes 4 cases of AUD which was managed with a protocol including withdrawal management with Nasya, Sirodhara as well as internal medicines. This was followed by Snehapana, Vamana or Virechana, therapeutic yoga, family counselling as well as administration of *Rasayana* so as to address the dependence. The treatment protocol was finalised as per the assessment of *Doshas*, based on the clinical presentation. The outcome was assessed with CIWA-Ar, AUDIT, and SADQ Questionnaire. Result: Such a protocol is capable of addressing the bio-psychosocial factors of AUD and was observed as effective. Symptomatic improvement was noticed after the treatment in all the four cases and there was improvement in scores of assessment. The result was promising as well.

INTRODUCTION

Alcohol Use Disorder (AUD) is a mental health condition that impacts a person's ability to control her/his alcohol intake. It is characterized by problematic pattern of alcohol use leading to clinically significant impairment or distress, as manifested by multiple psychosocial, behavioural or physiologic features.^[1] The harmful use of alcohol is a causal factor for several diseases and injury conditions. Worldwide 3 million deaths every year result from harmful use of alcohol, which represents 5.3% of all deaths.^[2]



In India, 62.5 million use alcohol, among which 17.4% have AUD. WHO has listed AUD as one of the three most deadly killer diseases of the 20th century.^[3]

AUD is among the most prevalent mental disorders globally, especially in high-income and upper-middle-income countries, and are associated with high mortality and burden of disease, mainly due to medical consequences, such as liver cirrhosis or injury.^[4] Almost 5.1% of the global burden of disease and injury is attributable to alcohol, as measured by Disability-Adjusted Life Years (DALYs). AUD is defined by a cluster of behavioural and physical symptoms, which includes withdrawal, tolerance, and cravings. In Āyurveda, disorders caused by excessive and improper use of alcohol and its management is well described under the content of *Madaātyaya*.

The condition can be considered Tridoshaja because it involves all three *Doshas* in its pathogenesis as inferred from clinical presentation. The condition is managed using treatment principles mentioned for Madathyaya. The most dominant Dosha among the three should be managed first. If all of the Dosas are equally effected the treatment is started with Kapha followed by *Pitta* and *Vata*.^[5] Clinically, AUD manifests itself in three distinct stages: withdrawal, dependence, and cravings. Chronic conditions are usually caused by Pitta and Vata imbalances.^[6] The most common symptoms of alcohol withdrawal syndrome include nausea and vomiting, tremor, paroxysmal sweating, anxiety, agitation, tactile-auditory-visual disturbances, headache, and clouding of sensorium. This is usually managed using the Dhara, Nasya, and Virechana procedures. Later, alcohol dependence will be addressed with Panchakarma therapy, followed by yoga and family counselling. Snehapana, Sodhana, Nasya, Vasti, Yoga, and family counselling are the methods used in general.^[7,8,9]

The case series includes 4 cases of AUD which was managed with a protocol including withdrawal management with *Nasya, Sirodhara* as well as internal medicines. This was followed by *Snehapana, Vamana* or *Virechana*, therapeutic yoga, family counselling as well as administration of *Rasayana* so as to address the dependence. The treatment protocol was finalised as per the assessment of *Doshas*, based on the clinical presentation. The effect was assessed with CIWA-Ar, AUDIT, and SADQ Questionnaire on 0th, 7th day and 45th days.

Patient Information

Case -01

A forty-year-old male carpenter attended the OPD complaining of uncontrolled drinking of alcohol for three months, disrupted sleep, pricking sensation in his hands, and shivering palms for the previous two years. His mother claimed that he had been more irate and belligerent in conduct over the previous three months. He had a 15-year history of alcohol addiction. At the age of 21, he began drinking alcohol as a result of peer pressure. Along with his friends, he increased the alcohol consumption steadily.

He claims that his family is highly traditional and that they strictly adhere to horoscopes. Due to certain horoscope concerns, one of his marriages that were virtually fixed was called off at the last minute. He was deeply depressed by this and kept drinking. The daily intake of alcohol rose gradually to 350–500 milliliters. Occasionally, he would begin drinking alcohol in the morning and continue throughout the day. A few days after consuming a significant amount of alcohol, he slept for two days without waking up. He made numerous attempts to cut down his alcohol consumption, but was unsuccessful. He would experience disrupted sleep and increased hand trembling, if abstained from alcohol. He was forced to consume more and more alcohol as a result. Two years back he was admitted in a De-addiction Centre for 15 days, but he discontinued the treatment. Later his sleep was disturbed and he again started to take alcohol.

Due to increased hand tremor he cannot do his work properly. Three months back his elder brother and family shifted to new home and this situation made him to take alcohol from home itself. He started to shout towards his mother and destroying household objects. He felt regret for the same and decided to stop intake of alcohol. After stopping alcohol he feels heaviness of head, increased thought, headache, eye strain, hand tremor, because of these he couldn't sleep, so consulted here for further management. He is a known case of type 2 DM since 5 years.

Case- 02

A 52 year old male AC mechanic hailing from Kannur with complaints of increased use of alcohol since 2 years, usage of abusive words while intake of alcohol, reduced appetite, nausea, reduced sleep from last 2 weeks. He is the 4th child of non-consanguinous parents. He started to use alcohol during his 25th year of age due to peer pressure and curiosity. He was an occasional drinker during that time. Then he got married at his 34 years, and after 6 years of married life, they got separated due to the psychiatric complaints of his wife. After that incidence, he started to drink heavily. He drank 3 pegs daily with friends during that time. He tried to stop alcohol intake, but couldn't. After 4 years, he again got married and had one child. Now also he is continuing intake of alcohol in large amount, which made issues in family life. After alcohol intake, he started to guarrel with wife and use abuse words towards her and even others. Last two weeks he is also having the complaints such as reduced appetite, reduced sleep and increased anger.

Case - 03

39 year old male construction worker from Malappuram attended the OPD with complaints of headache, tiredness and giddiness, since 1 week. He is continuously using alcohol from the last 15 years. At his 16 years of age, he started to drink alcohol due to curiosity. From 20th age onwards he became addicted to alcohol, and after intake of alcohol, he made problems in house with his father and brother. Daily he is having alcohol up to 3-4 pegs, sometimes it increases up to 1 L. Parents took him to a de-addiction centre for 3 times. But when back home, he again started to take alcohol and creates problems. Last month he quarrelled with his sister and started to beat her after drinking. After intake he became more aggressive and was even destroying objects.

Case-04

56 year old male electrician attended OPD with complaints of increased use of alcohol since 1 month. Also he was having the complaints of reduced and disturbed sleep, reduced appetite, tremors on hands. He started to use alcohol from 23 years of age with peer groups. He was working in Mumbai and returned to home town at 35 years of age, after the death of the father. During that time he used alcohol daily, after reaching hometown he completely stopped alcohol, after which he experienced hearing of sounds during that time. At 38 years of age, he got married. After 6 months of marriage, he again started to use alcohol daily 3-4 pegs/day. Sometimes he completely withdraw from alcohol use for 4-6 months and restarts it. Last one month he started to drink alcohol from the morning itself. He also have tremor in hands, disturbed sleep and reduced appetite.

	Case 1	Case 2	Case 3	Case 4
Dosha	Vathapitha	Kaphapitha	Tridosha	Vathapitha
Dushya	Rasa	Rasa	Rasa	Rasa
Bhoomi desa	Sadharana	Sadharana	Sadharana	Sadharana
Deha desa	Sarvasareera Manas	Sarvasareera Manas	Sarvasareera Manas	Sarvasareera Manas
Roga bala	Madhyama	Pravara	Pravara	Madhyama
Rogi bala	Madhyama	Avara	Avara	Madhyama
Kshanadi	Varsha	Vasantha	Sarath	Sarath
Vyaadhyavastha	Purana	Purana	Purana	Purana
Anala	Madhyama	Avara	Madhyama	Avara
Prakruti	Vata Pitha	Vata Kapha	Vata Pitha	Vata Pitha
Vaya	Youvana	Youvana	Youvana	Youvana
Satwa	Madhyama	Madhyama	Avara	Avara
Satmya	Sarvarasa	Sarvarasa	Sarvarasa	Sarvarasa
Abhyavaharana Sakthi	Madhyama	Avara	Madhyama	Avara
Jaranasakti:	Madhyama	Avara	Madhyama	Avara

Table 1: Clinical Findings- Dasavidha Pareeksha

Table 2: Mental Status Examination

	Case 1	Case 2	Case 3	Case 4			
General appearance and behaviour							
General appearance	Lean, well dressed	Lean, well dressed Lean, well dressed		Lean			
Attitude towards examiner	Co-operative, eye contact maintained	Co-operative, eye contact maintained	Co-operative, eye contact maintained	Co-operative, eye contact maintained			
Comprehension	Intact	Intact Intact		Intact			
Gait and posture	Normal	Normal	Normal	Normal			
Motor activity	Impaired	Appropriate	Normal	Normal			
Social manner	Appropriate	Appropriate	Appropriate	Appropriate			
Rapport	Established with ease	Established	Established	Established			
Speech							
Rate and quantity	Normal	Reduced	Increased	Increased			
Volume and tone	Normal	Normal	High	Increased			

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Flow and rhythm	Normal	Normal	Normal	Decreased
Mood	Sad	Euthymic	Euthymic	Нарру
Affect	Affect Euthymic		Euthymic	Нарру
Thought		·		
Form and process	Continuous, goal oriented	Continuous, goal oriented	Continuous, goal oriented	Continuous, goal oriented
Content	No delusions	Suicidal ideation while drinking	H/o suicidal attempt	Ideas of reference
Perception	Hallucinations – auditory, tactile	Auditory hallucination	No hallucinations	H/o auditory and visual hallucination
Cognition				
Consciousness	Conscious	Conscious	Conscious	Conscious
Orientation: time, place, person	Intact	Intact	Intact	Intact
Attention and concentration	Attention and concentration Intact		Intact	Intact
Memory		·		
Immediate	Intact	Intact	Intact	Intact
Recent	Intact	Intact	Intact	Intact
Remote	Intact	Intact	Intact	Intact
Intelligence	Intact / 6	Intact	Intact	Intact
Abstract thinking	Intact	Intact	Intact	Intact
Reading and writing	Intact	Intact	Intact	Intact
Visuospatial ability	Intact	Intact	Intact	Intact
Insight	Grade 5	Grade 5	Grade 4	Grade 5
Judgment	Intact	Intact	Intact	Intact
Impulsivity	Present	Present	Present	Absent

Diagnosis

According to DSM V diagnostic criteria, all the four cases were diagnosed with "Alcohol Use Disorder". Based on the *Lakshanas* of *Madathyaya* mentioned in classics, case 1 was diagnosed as *Vataja madathyaya* with *Pithanubandha*, case 2 as *Pithaja madathyaya* with *Kaphanubandha*, case 3 as *Tridoshja madathyaya* with *Kaphanubandha*, case 4 as *Vataja madathyaya* with *Kaphanubandha* doshik features.

Table 3: Dosha Assessment and Diagnosis

	Case 1	Case 2	Case 3	Case 4
Lakshana	Prajagara Atichinthana Haritavarna Sweda Kampa Daha	Prajagara Krodha Arochaka Tantra	Prajagara Hrudayavyadha Kasa Siraparswa Asthi sandi vedana Srama	Prajagara Kampa Arochaka Parswasula Daha Sweda
Diagnosis	Vatapaithika Madathyaya	Kaphapaithika madathyaya	Tridosha madathyaya with Kaphadhika	Vatapaithika madathyaya

Therapeutic Interventions

The therapy was started immediately after diagnostic evaluation. It includes withdrawal management, dependence management, rehabilitation, yoga and family counseling. As withdrawal management *Nasya, Dhara, Thalam* etc was done, considering dependence and cravings *Snehapana, Vamana, Virechana* etc was done.

Case 1	Case 2	Case 3	Case 4
<i>Drakshadi kwadha^[10]</i> 90ml Bd	<i>Drakshadi kwadha</i> 90ml Bd	<i>Drakshadi kwadha</i> 90ml Bd	<i>Drakshadi kwadha</i> 90ml Bd
<i>Ajamodarka</i> ^[7] 20ml + 20ml warm water Bd after food	<i>Ajamodarka</i> 20ml + 20ml warm water Bd after food	<i>Ajamodarka</i> 20ml + 20ml warm water Bd after food	Sarpagandha + Gokshura + Sankhupushpi churnam 3gm BD
Manomitram tab 1 – 0 – 1 with Kashaya	Sweta sankhapushpi churna + Yashti churna + Aswagandha churna 3gm BD	Sweta sankhapushpi churna + Yashti churna + Aswagandha churna 3gm BD	<i>Dhatryadi ghrita</i> ^[16] 5gm HS
<i>Amrutha mehari curna</i> 5gm bd with warm water			<i>Somalatha churna</i> 5gm HS

Table F. Dress during Davis

Table 4: Internal Medications

Procedure	Case 1	Case 2	Case 3	Case 4
Nasya	<i>Ksheerabala</i> (7) - 5 days (1ml-3ml)	<i>Ksheerabala</i> (7) - 7 days (1ml-3ml)	Ksheerabala (7) - 7 days (1ml-3ml)	
Sirodhara	Useera dhara 7 days			Dasamula Kwatha dhara - 7 days
Virechana	Avipathi churna (25 gm)			
Rookshana	Takra (1L)+ vaiswanara churna (10gm)	Takra (1L)+ vaiswanara churna (10gm)	Takra (1L)+ vaiswanara churna (10gm)	Gandharva hastadi Kwatha+2 Shaddharana tab+ Ashtachurna 5gm BD
Snehapana (gritha)	Mahatiktaka ¹¹ 5 days	Dhathryadi - 7 days	Dhathryadi - 7 days	Tikthaka- 12 7 days
Abhyanga + Sweda	Pinda taila	Dhanwanthara taila	Dhanwanthara taila	Dhanwanthara taila
Vamana		Madanapippali (6gm)+ Vacha (2gm) + Yashti curna (6gm) 1 day	Madanapippali (6gm)+ vacha (2gm) + Yashti curna (6gm) 1 day	
Virechana	Avipathi churna - 30 gm			Avipathi churna - 30 gm

Follow-up and Outcome

Follow up has been done two times after assessing improvement in the classical signs and symptoms of *Madathyaya*. Assessment of dependence done with the AUDIT questionnaire and its severity assessed with SADQ-Questionnaire. The Clinical Institute Withdrawal Assessment for Alcohol–Revised scale (CIWA – Ar) assessment criteria where used to evaluate the effectiveness of the intervention in all patients. A reduction in CIWA - Ar scale score was noted after the treatment.

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Table 6: Clinical Features on Assessment in the Four Cases							
Ca	se 1	Case 2 Case 3			Case 4		
	AUDIT (Self Report version)						
	32 22 28 23					3	
Alcohol d	ependence	Alcohol d	ependence	Alcohol d	Alcohol dependence		ependence
	SADQ – Questionnaire						
	40 35 28 30						
Severe	Alcohol	Severe	Alcohol	Moderat	e Alcohol	Moderat	e Alcohol
Depe	ndence	Depei	ndence	Dependence Dependence			idence
CIWA – Ar Scale							
BT	AT	BT	AT	BT	AT	BT	AT
43	7	27	3	29	5	27	4

Table 7: Outcome Measurement

Case 1	Case 2	Case 3	Case 4			
After Withdrawal Management						
Sleep improved Appetite – Normal <i>Kampa</i> reduced	Sleep improved <i>Kampa</i> reduced					
After Shodhana						
Cravings, Krodha reduced DahaCravings, Tantra, Krodha reducedAsthi sandhi soola, Srama reduced Kasa relievedDaha, Atisweda & Parswasula reduced						
One month after medication						
Cravings for alcohol not noticed in all cases Symptoms subsided						

DISCUSSION

In Ayurvedic classics increased use of alcohol and the resulting conditions along with its management is discussed under the context of *Madathyaya*. Vitiation of all the three *Doshas* in the *Samprapti*, and the disease is diagnosed based on the predominant *Dosha* as per the presenting symptoms. Treatment principle should be based on *Madathyaya*. If all of the *Dosas* are equally dominant, *Kapha dosha* should be treated first, followed by *Pitta* and *Vata*.

Clinically, AUD manifests itself in three distinct stages: withdrawal, dependence, and cravings. Chronic conditions are usually caused by *Pitta* and *Vata* imbalances and require treatment. Acharya Vagbhata describes the *Madatyaya* treatment as lasting up to 7 or 8 days to alleviate the symptoms of alcohol withdrawal syndrome. Symptomatic management of withdrawal can be done through the process of detoxification, which will minimize the withdrawal effect. *Ashtanga lavana, Ajmodarka, Drakshadi kashaya* are used internally to minimize the possible withdrawal symptoms. *Panchakarma* procedures such as *Nasya, Virechana, Abhyanga, Siro virechana,* *Sirodhara* with suitable medicines is observed as effective in reducing withdrawal symptoms.

For dependence and intoxication, *Shodhana* therapy followed by *Shamana oushadha* provides better relief. *Vamana, Virechana nasya, Vasthi* are the main *Shodhana* therapies useful in such conditions as per the predominance of the *Dosha*. Prevention of relapse should be done with *Rasayana*, Yoga and *Satvavajaya* measures.

All the four cases discussed here are satisfying moderate to severe alcohol dependence assessing with AUDIT and SADQ questionnaire, CIWA-Ar scale also demonstrate the presence of withdrawal symptoms. Based on at least two of the following symptoms occurring within a 12-month period, all the patients were diagnosed with AUD in accordance with DSM V due to a problematic pattern of alcohol use that resulted in clinically significant impairment or distress.

For all the cases Ayurvedic withdrawal management was administered initially. *Drakshadi kashaya* and *Ajamodarka* was given internally and *Nasya* with *Ksheerabala taila* 7 *Avarthi* given as *Sodhana* procedure. After withdrawal management,

withdrawal symptoms were reduced in each case. Following proper *Deepana, Rookshana* was done and *Snehapana* was given for 7 days or up to attaining *Samyak snigda lakshana.* As *Sodhana, Vamana/ Virechana* was given according to assessed *Dosha* and after proper *Uthklesana* of *Doshas.* After the completion of *Sodhana, Peyadi krama* was given. Throughout the therapy patients maintained their stability and cooperation. Dependence and cravings reduced after *Sodhana* and on follow-up.

Case 1

Diagnosed as Vatapitha Madathyaya on the basis of symptoms present. He is also a known case of diabetes so Amrithamehari curna was given. Manomitram tab also given to this patient because he had psychiatric symptoms such as excessive thought, auditory and visual hallucination. Along with the Nasya, Useeradi kashaya dhara, Virechana with Avipathi curna was done to reduce aggravated Vatapitha dosha and also to reduce the withdrawal symptoms. For *Snehapana mahatiktaka grita* was selected due to *Vatadhika pitha* predominance after withdrawal management. Virechana with Avipathi curna was given as Sodhana procedure. Cravings and anger subsided after Sodhana, and Daha felt relieved as well.

Case 2

After evaluating the *Doshas*, the patient was diagnosed with *Kapha paithika madathyaya* based on the symptoms present. Internally *Yashti, Aswagandha*, and *Sweta sankha pushpi churna* were administered to lessen alcohol dependence and cravings. Sleep improved, appetite returned to normal, and nausea decreased after the *Nasya*. For *Snehapana Dhatryadi ghrita* was selected because it is effective in symptoms of *Madatyaya*. *Vamana* was done as the presentation was *Kapha* dominant. Cravings, *Tantra, Krodha* decreased after *Sodhana*.

Case 3

Diagnosed as *Tridosha madathyaya* with *Kaphadhika* based on the symptoms present. *Yashti, Aswagandha*, and *Swetasankhapushpi churna* combination were administered for the same. After *Nasya* headache decreased and sleep also improved. *Dhatryadi grita* was given as *Snehapana*, because it is effective in the symptoms of *Madatyaya*. As per the presentation of *Kapha* predominant *Vamana* was administered. After *Sodhana asthi santhi sula, Srama* and *Kasa* relieved.

Case 4

After determining the *Dosha*, based on the symptoms *Vata paithika madathyaya* was the diagnosis. Combination of *Sarpagandha*, *Gokshura*, and *Sankhapushpi churna*, and *Somalatha churna* was administered because sleep related issues were predominant in this case. *Dasamula Kashaya sirodhara* to reduce aggravated *Pitha*, to enhance sleep, and to reduce withdrawal symptoms. After withdrawal management, *Kampa* reduced and sleep quality improved. *Tiktaka ghrita* was given as *Snehapana* to reduce aggravated *Pithadosha*. Due to the *Vatapitha* predominance as *Sodhana*, *Virechana* with *Avipathy curna* was selected. *Daha*, *Atisweda*, and *Parswasula* decreased after *Sodhana*.

CONCLUSION

Madathyaya line of management is being adopted for AUD as per the condition. Targeting symptoms, managing withdrawal, reducing dependence, and preventing relapses are the objectives of management. The treatment plan is determined by the *Doshavastha*. It was noted that the protocol was working, secure, as well as efficient.

To provide the patient with symptomatic relief, the treatment focuses on balancing *Tri Dosha (Vata, Pitta,* and *Kapha).* Two facets of Ayurvedic treatment are the body's detoxification and the preservation of a healthy metabolism. Modern metrics and scales, such as CIWA-Ar scale, are used to measure the effectiveness of therapy and show that *Panchakarma* procedures along with appropriate medication can produce positive results. It is imperative that more research be done in order to generalize the obtained results.

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