



An Observational Study On Etiopathogenesis Of Madatyaya/ Alcohol Dependence

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ABSTRACT

Alcohol dependence is a most alarming issue in the world nowadays. It is a psychiatric diagnosis in which a person continues to use alcohol despite negative consequences to relationship, work, or quality of health and life. *Madya* has nectar like properties when used judiciously following all norms, otherwise it acts as poison. *Madya* possess all the qualities of *Visa* and indiscriminate use of *Madya* causes *Madatyaya*. As per ayurvedic concept *Madatyaya* is *Tridoshaja vyadhi* mainly *Kapha sthana* is vitiated along with *Agni*. *Nidana* is the primary cause of manifestation for every *Vyadhi* and *Nidana Parivarjana* is thought to be a sort of cure. *Nidana Parivarjana* and there by practising *Pathya*, one might reduce the likelihood of experiencing *Vyadhi* by being aware of the *Nidana*. Though, finally it will give a proper knowledge regarding the etiological factors of *Madatyaya* in the present era.

Keywords : *Madatyaya*, *Nidana*, Alcohol, Alcohol dependence, Alcohol intoxication.

INTRODUCTION

Ayurveda is an ancient Indian system of traditional medicine. It is a holistic approach to health and wellness. According to Ayurveda health is not merely considered to be a state of freedom from ailments or diseases. Health is essential for enjoyment of all worldly pleasure in a righteous manner. For many people, drinking alcohol is nothing more than a pleasant way to relax, however some people drink excessively and cause damage not only to themselves but also those around them. Alcoholism or alcohol dependence is a medical condition characterized by an impaired ability to stop or control alcohol use despite adverse social, occupational or health consequences. In Ayurveda alcohol dependence or alcoholism are described under the heading of *Madatyaya*. The *Dravya* which vitiates the *Buddhi* and causes *Mada* such *Dravyas* are *Tama Guna Pradhana* and hence called as *Madya* or *Madakari* which is available in the form of *Asava*, *Arishta*, *Sura*, *Varuni*, *Sithu*¹. In *Charaka Samhita*, *Madya Varga* is classified under one of 12 *Ahara varga*². It is utilized as *Ahara Dravya* as *Anupana* or as *Aushadhi*. In *Sushruta Samhita* there is reference of *Madhya* being used for *Samgyrharana* in *Shastrakarma*.

Madatyaya comprises of two words *Mada* & *Atyay*. *Mada* means *Harsha* (excitement) *Atyay* means *Atikrama* (excess)³. This over excitement is caused by excess consumption of *Madya*.

Madatyaya is produced when person takes the *Madya* without considering *Prakriti*, *Satmya*, *Agni* etc. continuing same amount of alcohol intake leads to *Madatyaya* & *Madatyaya Janya Yakrit Vikara*⁴. *Acharya Sushruta* classifies the diseases caused due to inappropriate use of alcohol as *Panatyaya*, *Paramada*, *Panaajeerna* and *Panavibhrama*⁵. Understanding the *Nidana* will give the hint to the pathophysiology, severity and prognosis of the disease. As it is told in our classics that *Nidana Parivarjana* is form of *Chikitsa*, understanding of *Nidana* and *Samprapti* is very much essential. So, the primary step is to prevent further consequence of disease by avoiding the causative factors and likely the manifestation of the disease⁶. Hence this study is effort made to understand the etiopathogenesis of *Madatyaya*.

OBJECTIVES

- To study the etiology and pathogenesis of *Madatyaya*.
- To understand the concept of *Madatyaya* in relation to Alcohol dependence.
- To prepare the questionnaire for the assessment of etiological factors and signs and symptomatology of *Madatyaya* (Alcohol dependence).

MATERIALS AND METHODS

Study design: Observational clinical study

Literary Source : Literary source of *Madatyaya* from classical Ayurveda textbooks, modern textbooks, internet source, concerned articles and previous works done were reviewed and documented for study.

Sample Source : For the present study patients of either sex will be selected at random without any bias of social, economic or religious status. Patient attending the O.P.D and I.P.D of Alva's Ayurveda Medical College and Hospital, Moodubidire, Punarjanma Deaddiction centre and other referrals were selected.

METHODS OF COLLECTION OF DATA :

- 110 patients suffering with Madatyaya was selected for the study.
- A special case proforma was be prepared which includes details of history taking, signs and symptoms and required examination as mentioned in our classics and allied sciences.
- Questionnaire was prepared which includes Nidana and Lakshana as mentioned in our classics and allied sciences. Patients were analysed and selected accordingly who will fulfil the diagnostic and inclusion criteria.

DIAGNOSTIC CRITERIA

Patients taking Madya having these features:^{7,8,9}

- Aruchi
- Trishna
- Daha
- Sweda
- Chardi
- Shareera kampa
- Pramoha
- Bhrama
- Pralapa
- Shiro ruja

Patients who are chronic alcoholics presenting with any of the five above symptoms was selected for the study.

Subjective criteria : Daha, Sweda, Sharirakampa, Trishna, Pralapa, Bhrama. Shiroruja.

Objective criteria : Haemoglobin, LFT

INCLUSION CRITERIA

- Age group between 18 – 60yrs.
- Patient fulfilling the diagnostic criteria.
- Alcohol dependent patient of either sex.

EXCLUSION CRITERIA

- Patient with systemic diseases.
- Patient with psychiatric illness.
- Patient with chronic liver condition.
- Malignancy of liver
- Person habituated to smoking.

OBSERVATION AND RESULTS

In the present study, 110 patients presenting with Madatyaya were screened. All the patients fulfilled the diagnostic and inclusion criteria. Therefore, study was conducted on 110 patients with specially designed case proforma containing history recording, physical examination, investigation, *Nidana Panchaka* and detailed assessment of specially designed questionnaires for Nidana of Madatyaya. It is observed that out of 110 patients 36.3% patients were belonged to the age group of 31-40 years. The gender wise distribution showed the majority of the patients were Males 98.1%. Data related to occupation showed a maximum of 50.9% were labourers. Regarding the diagnostic features 66.3% had Aruchi, 98.1% had Trishna, 82.7% had Daha, 96.3% had Sweda, 20% had Chardi, 37.2% had Shareera Kampa, 31.8% had Pramoha, 12.7% had Bhrama, 90% had Pralapa, and 74.5% had Shiroruja.

RESULTS

In the present study, Nidana and Samprapti mentioned in the classics and in the contemporary medicine in relation with the signs and symptoms of Madatyaya was analysed based on observations made on 110 patients. Nidana were systematically divided in to various domains. Under each domain each item is given with 4 Likert scales with categories Daily, Occasionally, Rarely and Never with scoring 1,2,3 and 4 respectively to record the response of the patients.

Statistical Significance

- If P value >0.05 indicates non-significant.
- If P value ranging from < 0.05 to 0.001 indicates significant.
- If P value <0.001 indicates highly significant.

Table No 1 Likert Scale of Frequency

SI No	Likert Scale of Frequency	Score	Frequency of Indulgence
1	Daily	1	Daily
2	Occasionally	2	3-4 times a week
3	Rarely	3	3-4 times a month
4	Never	4	Never

Results are analysed using Pearson Co-relation coefficient test.

Table No 2 Showing result of Diagnostic features of *Madatyaya* with *Madyapanajanya Nidana*

Diagnostic Features	Nidana	r - Value	P -Value	Result
Aruchi	<i>Atimadyapana</i>	0.759	0.041	S
	<i>Nirbuktha madyapana</i>	0.906	0.046	S
	<i>Ekanta madyapana</i>	0.993	0.034	S
Trishna	<i>Atimadyapana</i>	0.999	0.003	S
	<i>Nirbuktha madyapana</i>	0.831	0.049	S
	<i>Ekanta madyapana</i>	0.958	0.045	S
Daha	<i>Atimadyapana</i>	0.927	0.038	S
	<i>Nirbuktha madyapana</i>	0.965	0.005	S
	<i>Ekanta madyapana</i>	0.878	0.016	S
Sweda	<i>Atimadyapana</i>	0.889	0.047	S
	<i>Nirbuktha madyapana</i>	0.901	0.044	S
	<i>Ekanta madyapana</i>	0.983	0.020	S
Chardi	<i>Atimadyapana</i>	0.984	0.041	S
	<i>Nirbuktha madyapana</i>	0.884	0.045	S
	<i>Ekanta madyapana</i>	0.828	0.028	S
Shareera kampa	<i>Atimadyapana</i>	0.859	0.041	S
	<i>Nirbuktha madyapana</i>	0.852	0.000	S
	<i>Ekanta madyapana</i>	0.721	0.027	S
Pramoha	<i>Atimadyapana</i>	0.820	0.010	S
	<i>Nirbuktha madyapana</i>	0.910	0.023	S
	<i>Ekanta madyapana</i>	0.918	0.049	S
Bhrama	<i>Atimadyapana</i>	0.900	0.028	S
	<i>Nirbuktha madyapana</i>	0.952	0.013	S
	<i>Ekanta madyapana</i>	0.832	0.042	S
Pralapa	<i>Atimadyapana</i>	0.889	0.037	S
	<i>Nirbuktha madyapana</i>	0.867	0.049	S
	<i>Ekanta madyapana</i>	0.794	0.041	S
Shiro ruja	<i>Atimadyapana</i>	0.947	0.023	S
	<i>Nirbuktha madyapana</i>	0.907	0.045	S
	<i>Ekanta madyapana</i>	0.849	0.013	S

Table No 3 Showing result of Diagnostic features of *Madatyaya* with *Aharaja Nidana*

RUKSHA ANNAPANA				
Diagnostic Features	Nidana	r - Value	P -Value	Result
Trishna	Mudga	0.448	0.035	S
	Masura	0.901	0.047	S
GURU SNIGDHA AHARA				
Diagnostic Features	Nidana	r - Value	P -Value	Result
Trishna	Godhuma	0.901	0.047	S
	Kukkuta mamsa	1.122	0,027	S
Sweda	Kukkuta mamsa	-0.195	0.041	S
USHNA AMLA AHARA				
Diagnostic Features	Nidana	r - Value	P -Value	Result
Daha	Pickle	0.022	0.032	S
Chardi		0.257	0.007	S
RASA PRADHANYA				
Diagnostic Features	Nidana	r - Value	P -Value	Result
Chardi	Madhura rasa	.254	0.007	S
Shiro ruja		-.207	0.030	S
Daha	Katu rasa	0.784	0.039	S
Sweda		.269	0.004	S
AHARAJA KRAMA				
Diagnostic Features	Nidana	r - Value	P -Value	Result
Daha	Ajirna madyapana	-.191	0.046	S

Table No 4 Showing result of Diagnostic features of *Madatyaya* with *Viharaja* and *Manasika Nidana*.

VIHARAJA NIDANA				
Diagnostic Features	Nidana	r - Value	P -Value	Result
Trishna	Ativyayama	.197	0.039	S
Pramoha	Diwaswapna	0.181	0.058	S
Shiroruja	Ashru Vegadharana	-216	0.024	S
MANASIKA NIDANA				
Diagnostic Features	Nidana	r - Value	P -Value	Result
Sweda	Krodha	-0.184	0.055	S

Table No 5 Showing result of Objective criteria with Diagnostic features of *Madatyaya*.

Objective criteria	Nidana	r - Value	P -Value	Result
Haemoglobin	<i>Atimadyapana</i>	-0.061	0.026	S
	<i>Nirbuktha madyapana</i>	-0.011	0.040	S
	<i>Ekanta madyapana</i>	-0.163	0.048	S
LIVER FUNCTION TEST				
Direct bilirubin	<i>Atimadyapana</i>	0.167	0.040	S
	<i>Nirbuktha madyapana</i>	-0.002	0.006	S
	<i>Ekanta madyapana</i>	0.080	0.005	S
Indirect bilirubin	<i>Atimadyapana</i>	0.174	0.028	S
	<i>Nirbuktha madyapana</i>	-0.021	0.031	S
	<i>Ekanta madyapana</i>	0.056	0.010	S
SGOT	<i>Atimadyapana</i>	0.805	0.005	S
	<i>Nirbuktha madyapana</i>	1.260	0.006	S
	<i>Ekanta madyapana</i>	0.976	0.007	S
SGPT	<i>Atimadyapana</i>	0.933	0.001	S
	<i>Nirbuktha madyapana</i>	1.116	0.008	S
	<i>Ekanta madyapana</i>	0.812	0.008	S

DISCUSSION

DISCUSSION ON *MADYAPANAJANYA NIDANA*

All Acharyas consider this as the main causative factor for *Madatyaya*. Excessive alcohol consumption is the prime cause for the disease as it leads to intoxication immediately and withdrawal or dependence in later stages.

Aruchi - Ati Madyapana will cause the vitiation of the Rasa Dhatu, which is situated in Hridaya, as it cause the vitiation of all Dhatus, by virtue of its Ushna, Tikshna, Amla guna. Atimadyapana is a causative factor for Amlapitta, hence *Aruchi* is one of the lakshna of Rasavaha and Annavaha sroto dushti.¹⁰

Trishna - Madya increases Pitta by virtue of its Tikshna, Ushna and Amla Guna, and Vata by its Ruksha guna and thus Pitta along with Vata results in Soshana of Rasavaha srotas, Kloma and Talu and results in Ati Trishna. Madyapana is one of the main causes for Udakavaha sroto dushti due to its Agneya and Vayavya guna and thus result in Ati Trishna.¹¹

Daha - Madya aggravates Pitta. Increased Amlata and Drava Guna of Pitta makes the Annarasa Vidagdha (improperly digested) which ultimately turns in to Kshara and Ama causes Antardaha.¹²

Sweda - By the Ushna and Tikshna property of Madya, it causes aggravation of Pitta which results in Atisweda.¹³

Chardi - Madya can aggravate Pitta dosha, which lead to Agnidushti causing Chardi. Madyapana is also one of the causes for Amlapitta. The main symptom of Urdhvaga Amla Pitta is Chardi.¹⁴

Shareera kampa - Atimadyapana can aggravates Vata due to its Ruksha Guna. Vitiated Vata circulates and Dosha Dushya Sammurchana take place and can leads to Shareera kampa.¹⁵

Pramoha - Madya due to its Ruksha Guna causes Vata Vridhi. Ati Madyapana will cause Ojakshaya. According to Acharya Sushruta, the symptoms of Ojakshaya also include Moha.¹⁶

Bhrama - Madya amplifies the Tamo Guna, these Dosha's circulate through the Manovaha and Buddhivaha Sira and get Sthanasamshraya in Mastishka which results in Bhrama.¹⁷

Pralapa - Excessive consumption of Madya will cause affliction to the Ojas, as Madya is having Vyavayi, Vikashi, Ashukari Guna. Pralapa is a feature of Vata Vridhi.¹⁸

Shiroruja - Atimadyapana and Nirbhuktha Madyapana leads to Agnidushti and accumulation of Ama. These can circulate through the body, and leads to Srotorodha in Manovaha Srotas, Prana Vayu get disturbed and leads to Shiroruja.

DISCUSSION ON AHARAJA NIDANA

AHARA DRAVYA

Mudga - Ati Mudga sevana can increases Vata dosha, leading to Rukshata while Madya which possesses Ruksha Guna also contribute to Ati Rukshata in the body. This can contribute Ati Trishna.¹⁹

Masura - Due to its Ruksha Guna, which depletes moisture and fluids in the body. This may contribute to dryness of kanta causing Ati Trishna.²⁰

Godhuma - Godhuma, which is heavy to digest. Godhuma combined with Madya slows down body's metabolic processes further impair Agni and leads to accumulation of Ama, and causing Trishna.²¹

Kukkuta mamsa – It can aggravate the Pitta Dosha, Madya further aggravate Pitta leading to Trishna and Sweda²²

Pickle - These are usually Amla and Ushna, which can aggravate Pitta dosha and disrupts the Annavaha Srotas leads to Daha and Chardi.²³

RASA PRADHANYA

Madhura rasa - Madhura in excess can lead to an aggravation of Kapha Dosha and Ama formation leads to Srothorodha causing Shiroruja.²⁴

Katu rasa - Ati Katu Rasa Sevana can aggravate Pitta Dosha. Pitta Vridhi leading to Daha and Ati Sweda in Madatyaya.²⁵

AHARAJA KRAMA

Ajirna madyapana - Consumption of Madya in an Ajirna Avastha can severely disrupts the Annava Srotas and it can lead to vitiation of Tridosha. This Vidagdha Anna along with Madya can cause Amlapitta due to aggravated Pitta and lead to Daha.²⁶

DISCUSSION ON VIHARAJA NIDANA

Ativyayama – It increases Vata. This increases Rukshata in kanta, talu. This imbalance disrupts the Udakava Srotas leading to Trishna and Trishna is one of the main symptoms of Udakava Srotodushti.²⁷

Diwaswapna - Diwaswapna aggravates the Kapha and Tamas, Madya is Tamo Guna Pradhana and also having the properties opposite to Ojas and further leads to Pramoha.²⁸

Ashru Vegadharana – It lead to an imbalance in Vata Dosha. When emotions are suppressed, it affects the Manava Srotas and disturbs the Prana Vata causing Shiroruja.

DISCUSSION ON MANASIKA NIDANA

Krodha - Krodha aggravates Pitta Dosha and does Shoshana of Dhatus. Krodha is considered as one of the Madyajanya vikara by Acharya Charaka.²⁹

DISCUSSION ON OBJECTIVE CRITERIA

Haemoglobin - Chronic consumption of alcohol often results in malnutrition causing deficiencies in essential nutrients like iron and folate, which are crucial for haemoglobin synthesis.³⁰

Alcohol inhibits the bone marrow's ability to produce RBC's and impairing their maturation leading to anaemia. Excessive alcohol consumption can cause haemolysis. Thus reduces the haemoglobin level.

Hematemesis is due to the rupture of oesophageal varices as a consequence of portal hypertension can lead to bleeding in the stomach and intestine. Bleeding from a ruptured vein can be sudden, severe, & life threatening.³¹

DISCUSSION ON LFT

Direct and Indirect bilirubin - Excessive alcohol consumption can lead to increased levels of both direct and indirect bilirubin. Alcohol metabolism produces acetaldehyde that can cause hepatocellular injury, leading to impaired bilirubin conjugation and excretion. This result in elevated serum bilirubin levels, particularly in conditions like alcoholic hepatitis or cirrhosis, where both conjugated and unconjugated bilirubin may rise.³²

Excessive intake of alcohol can lead to cirrhosis, and fibrosis, causing structural damage to the liver and bile duct. This may result cholestasis. As a result conjugated bilirubin cannot be excreted in to the bile and elevated its level.³³

SGOT & SGPT - Oxidative stress from alcohol consumption can lead to elevated level of SGOT&SGPT. Alcohol metabolism generate reactive oxygen species (ROS), which can damage liver cells leading to inflammation and cellular injury. This damage results in the release of these enzymes in to the bloodstream.³⁴ Chronic alcohol intake can lead to conditions like alcoholic hepatitis and cirrhosis, causing elevated enzyme levels in the blood stream.

CONCLUSION

Madatyaya is Tridoshaja Vyadhi with the involvement of mainly Rasavaha, Rakthavaha, Annavaha, Udakavaha, Manovaha, Swedavha and Samjnavaha srotas. Alcohol dependence arises from a complex interplay of many factors like genetic, psychological environmental influences, emotional trauma and socio – economic factors.

The study confirms Atimadyapana, Nirbhuktha Madyapana, Ekantha Madyapana as the main causative factors for the manifestation of Madatyaya which is also stated in our classics. Which can be considered as Sannikrishta Hetu. Aharaja, Viharaja and Manasika nidana can be considered as Dosha hetu and Vyanjaka hetu while Madya is Vyadhi hetu, which itself causing the disease Madatyaya.

Among objective criteria, Madyapanajanya Nidana shows relation with decreased haemoglobin, and altered LFT (increased direct bilirubin, indirect bilirubin and increased SGOT and SGPT). From observation and results of Madyapanajanya Nidana, Aharaja , Viharaja and Manasika Nidana explained in different classics, above mentioned Nidana are associated with manifestation of Madatyaya.

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