

Research Article

A Randomised Open Clinical Study on the Efficacy of ‘Sumukti’- an Indigenous Compound on Subjective Symptoms of *Madatyaya* With Special Reference to Alcohol Dependence

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A B S T R A C T

Introduction: With more than half of all alcohol drinkers in India falling into criteria for hazardous drinking, alcohol related disorders are emerging as a major public problem in country. In Ayurveda alcohol related disorders are correlated to *Madatyaya*. Here we observe the vitiation of *Shareerika* and *Manasika Doshas* and the treatment consists of *Doshavasechana*, *Rasayana* and *Satvavajaya chikitsa*. To fulfill all these treatment measures, an indigenous compound named ‘*Sumukti*’ which contains 11 drugs with multiple properties of *Dosha shamana*, *Rasayana*, *Medhya* and *Yakrit Uttejaka* was prepared and administered in the patients of *Madatyaya* WSR to alcohol dependence.

Aims & Objectives: To study the efficacy of indigenous compound- ‘*Sumukti*’ on alcohol dependence.

Methodology: 52 patients were screened by using ‘Alcohol Dependence Scale’. 30 patients who fulfilled the inclusion criteria of *Madatyaya* WSR to alcohol dependence from OPD and IPD of SDM College of Ayurveda and Hospital, Hassan were selected and compound ‘*Sumukti*’ was given in the dose of 15ml, thrice a day before half an hour of food for 30 days.

Result: There was statistically significant effect seen in subjective parameters with more than 60% improvement. Moderate improvement (50-74%) was seen in majority of patients (53.33%). Marked improvement (75-99%) also seen in 43.33% of patients (13).

Conclusion: Compound found effective in subjective symptoms and can be a choice of medicine in alcohol dependence.

Keywords: *Madatyaya*, Alcohol Dependence, *Sumukti*

Introduction and Need for The Study

Alcohol-related problems occur when a person experiences social, psychological or physical difficulty as a consequence of heavy drinking, or when people close to them are drinking heavily. People of all ages may experience such problems, but older people are more prone to adverse effects because they are more strongly affected by alcohol than younger people. This is because of changes in the way the body processes alcohol as a person age.

Definition of Alcohol Dependence relates to evidence of repeated impairments from alcohol in multiple areas of life functioning, despite which the person returns to drinking.¹

The National Household Survey of Drug Use in India is the first systematic effort to document the nation-wide prevalence of drug use. Alcohol (21.4%) was the primary substance used (apart from tobacco) followed by cannabis (3.0%) and opioids (0.7%). There was a marked variation in alcohol use prevalence in different states of India (current use ranged from a low of 7% in the western state of Gujarat (officially under Prohibition) to 75% in the North-eastern state of Arunachal Pradesh.²

According to WHO study Alcohol related problems account for more than 1/5th of hospital admissions, 18% of psychiatric emergencies, more than 20% of all brain injuries, and 60% of all injuries reporting to India's emergency room.³

There is no complete treatment for dependence of Alcohol in allied sciences and even for withdrawal. The drugs used for Alcohol related disorders in allied science have many harmful effects over body. So, there is an immense need to counter the untoward effects of alcohol.

In Ayurveda alcohol related disorders can be correlated to *madatyaya*. Here we observe the vitiation of *shareerika* [physical] and *manasika* [psychological] *doshas*, which ruins the physical, psychological, social, economic and occupational wellbeing. In Ayurvedic classics treatment of *madatyaya* consists of *doshavasechana* [detoxification], *Rasayana* [rejuvenation] and *satvavajaya chikitsa* [psychotherapy]. To fulfill all these treatment measures, a compound is prepared and administered in the patients of *madatyaya* with special reference to Alcohol Dependence.

It is an indigenous compound named *sumukti* which contains 11 drugs with multiple properties of *dosha shamana* [passifying vitiated doshas], *Rasayana* [rejuvenator], *Medhya* [nootropic] and *yakrit uttejaka* [hepatoprotective]. There is no direct reference of this compound in any of the classics. Ingredients of compound are *Kiratatika* [Swertia Chirata], *Guduchi* [Tinospora cordifolia], *Mandookaparni* [Centella asiatica], *Haritaki* [Terminalia chebula], *Vibhitaki* [Terminalia bellarika], *Amalaki* [Embilica officinalis], *Bringaraja* [Eclipta alba], *Ashwagandha* [Withania somnifera], *Katuki*

[Pichrorhiza kurroa], *Draksha* [Vitis vinifera], *Yastimadhu* [Glycyrrhiza giabra], *Twak* [Cinnamomum cassia], *Ela* [Elettaria cardamomum] and *Sarkara* [Jaggery]. It was the intention of taking a study on *madatyaya* with *sumukti* with objectives; to study the efficacy of indigenous compound - '*sumukti*' on alcohol dependence.

Objectives of Study

To study the efficacy of indigenous compound - '*Sumukti*' on alcohol dependence.

Methodology

Plan of Study

- Whole study was carried out in SDM College of Ayurveda and Hospital, Hassan, Karnataka.
- Patients were screened initially by using Alcohol Dependence Scale [ADS]
- Sampling method-simple random sampling
- Study period-1month
- Compound '*Sumukti*' was given in the dose of 15ml, thrice a day be forehalfan hour of food for 30 days.

Source of Data

- 52 patients were screened by using alcohol dependence scale [ADS]
- 32 patients who fulfilled the inclusion criteria of *madatyaya* WSR to alcohol dependence from OPD and IPD of SDM College of Ayurveda and Hospital, Hassan were selected.
- 30 patients completed the treatment successfully.

Criteria for Diagnosis

- Diagnosis was made on the basis of general symptoms of *madatyaya* and ICD-10 diagnostic criteria for alcohol dependence.

Inclusion Criteria

- Subjects with general symptoms of *madatyaya* [symptoms of alcohol dependence]
- Age limit- 18- 55
- Subjects of both sexes.

Exclusion Criteria

- Subjects suffering from other systemic diseases like diabetic mellitus and hypertension.
- Subjects suffering from chronic liver diseases like liver cirrhosis
- Subjects suffering from organic brain diseases.

Plan of Study

- Patients were screened initially by using alcohol dependence scale [ADS]
- Sampling method - simple random sampling
- Study period - 1 month

- Compound 'Sumukti' was given in the dose of 15 ml, thrice a day before half an hour of food for 30 days.

Assessment Criteria

A self-prepared scale based on the diagnostic criteria of alcohol dependence according to ICD-10 was prepared and used for assessment on the 1st day and 30th day of treatment.

Statistical Analysis

- Statistical analysis was done using SPSS VER.16
- 30 completed cases were taken for statistical analysis excluding drop out (2)
- Wilcoxon signed rank test is done to analyze the significance of change in subjective parameters

Result

In this study all the patients were male (32), more number (7) of patients were belonging to 40-45 years of age, 26 patients were married, occupation wise maximum (16) patients had physically strained work, socio - economic status wise 23 were belonging to Middle class income group and majority of patients [14] were educated till high school.

All patients had multiple complaints while they came for treatment. *Shrama* [fatigue] was the main complaint which was presented in all patients. 31 patients had *sharira kampa* [tremors], 30 patients had *prajagara* [sleeplessness] and *alasya* [laziness]. *Aruchi* [tastelessness] was present in 29

patients and 28 patients found to have *mandagni* [reduced digestive capacity]. *Hrillasa* [nausea] was seen in 18 patients, *mada* [acute intoxication] was seen in 17, *manda jwara* [mild fever] was present in 16 and *chardi* [vomiting] was seen occasionally in 12 patients. *Shoka* [sorrow], *panduta* [paleness], *pralapa* [irrelevant talking] was present in 9 patients, *bhrama* [giddiness] in 8 patients and *atisara* [loose stools], *roopanam asatam darshanam* [visual hallucinations] was seen in 6 patients each. *Apasmara* [seizures], *bhaya* [phobia] were seen in 3 patients each and *jrimbha* [excessive yawning], *pratata trishna* [excessive thirst] was seen in 2 patients each.

Discussion

An effort has been done to assess alcohol dependence in two stages, as physical dependence and psychological dependence. First one is mostly related to body under which tolerance and withdrawal symptoms are categorized. Psychological dependence is mostly related to mind under which craving, salience, loss of control and persistent use is categorized.⁴ In Ayurveda also it is clearly told that *Madatyaya* is a disease which affect both body and mind simultaneously. There is affliction of *Sharirika Dasha* [physical ailments], *Dushya*, *Ojas*, *Buddhi* [intelligence], *Satva* [mind], *Indriya* [senses] in *madatyaya*.⁵ So it is clearly known that alcohol dependence is a psychosomatic condition in which both body and mind should be taken care with giving more importance to mind.

Table 1. The effect of sumukti on subjective parameter

Parameter	Mean		% of red.	Negative ranks			Positive ranks			Ties	Total	Z-value	P-value	Remarks
	Bt	At		N	Mr	Sr	N	Mr	Sr					
Craving	8.13	2.96	63.59	30	15.5	465	0	0	0	0	30	-4.85	.000	S
Tolerance	6.36	1.36	78.61	30	15.5	465	0	0	0	0	30	-4.81	.000	S
Salience	6.13	2.16	64.76	30	15.5	465	0	0	0	0	30	-4.81	.000	S
Loss of control	6.70	1.9	71.64	29	15	435	0	0	0	1	30	-4.72	.000	S
Persistent use	7.13	1.73	75.73	30	15.5	465	0	0	0	0	30	-4.81	.000	S
Withdrawal symptoms	5.2	1.26	75.76	30	15.5	465	0	0	0	0	30	-4.80	.000	S

Table 2. The overall effect of Sumukti on 30 patients of Madatyaya W.S.R. to alcohol dependence

Improvement	Frequency	Percentage
No change	0	0
Mild improvement (25-49%)	1	3.33
Moderate improvement (50-74%)	16	53.33
Marked improvement (75-99%)	13	43.33
Complete remission (100%)	0	0
Total	30	100

Effect of Sumukti in Physiological Dependence

Madatyaya is a disease with vitiation of all three *doshas*.⁶ So there will be symptoms of all *doshas* seen in *madatyaya*. Considering the withdrawal symptoms, tremors and insomnia may be due to *vata dosha*, hypertension, increased sweating etc. are due to *pitta dosha* and nausea, vomiting, weakness etc. seen due to involvement of *kapha dosha*. In *sumukti yastimadhu*, *draksha* mitigate *vatapitta dosha*, *kiratatikta*, *katuki*, *vibhitaki* mitigate *kaphapitta dosha*, *bringaraja*, *ashwagandha* mitigate *vatakapha dosha* and *guduchi*, *mandookaparni*, *haritaki*, *amalaki* mitigate *tridosha* in their action. That might be the reason compound acted effectively on withdrawal and tolerance symptoms.

Based on properties of Sumukti: Compound has *tikta* [bitter], *kashaya* [pungent], *madhura* [sweet] as predominant *rasa* [flavor], *laghu* [light], *ruksha* [dryness] *guna* [properties] and *madhura* [sweet] *Vipaka* [end digestion]. So due to its *rasa* [flavor] it might have acted against *pitta dosha*, by *ruksha*, *laghu* properties it acted against *kapha dosha* and due to its *madhura vipaka* it acted against *vata dosha* and there by reduced whole physical symptoms.

Sumukti as *Rasayana* [rejuvenator]: *Madya* [alcohol] is having properties which is opposite to *ojas*. In *madatyaya* there will be affliction of all *dhatu*s due to vitiation of all three *doshas* due to which also there will be more withdrawal symptoms and reduced resistant against alcohol. *Sumukti* is an effective *rasayana* compound as it contains *guduchi*⁷, *triphala*⁸, *ashwagandha*⁹, *draksha*¹⁰ and *yastimadhu*¹¹ which are known *rasayana* drugs. As per classics *rasayana* helps a person to attain long life, memory, intelligence, health, good complexion, vitality, clear senses etc.¹² So it has helped for the improvement of *dhatu*s and mental health hence reduced the physical and psychological symptoms.

Alcohol has major effects on most of the neurochemical systems, depending on the dose, with opposite actions during intoxication and withdrawal. Alcohol acutely increases dopamine and its metabolites, brain imaging reveals enhanced activity in relevant areas of the brain, and chronic drinking changes dopamine receptor numbers and sensitivity. Another key neurochemical is serotonin, with alcohol causing changes in key aspects of this transmitter and associated receptors, and levels of serotonin impact on the amount of alcohol consumed. Additional studies pointed out the indirect actions that alcohol has on the benzodiazepine receptor-sensitive γ -aminobutyric acid (GABA) complexes in the brain. These effects, especially actions on the GABA type A receptor (GABA_A), enhance the acute sedating, sleep-inducing, anticonvulsant, and muscle-relaxing effects of alcohol. Finally, alcohol also acutely enhances the functioning of the opioid-related brain systems and impacts on adenosine, neurosteroids, and acetylcholine.¹³

Also, there will be multiple vitamin deficiency mainly thiamine deficiency, can present as any of several neurological syndromes, including a sixth cranial nerve palsy (Wernicke's) and a severe anterograde amnesia (Korsakoff's). So, there is need of antioxidant, immunomodulatory and nutritive drugs for the treatment.¹⁴

Researches show that many drugs of this compound have immunomodulatory and antioxidant property. *Guduchi*¹⁵ and *haritaki*¹⁶ has immunomodulatory action and *amalaki*¹⁷, *draksha*¹⁸, *ashwagandha*¹⁹, *kiratatikta*²⁰, *yastimadhu*²¹ etc. is found very good antioxidant property in various experimental studies. Thus, the compound found effective in physiological dependence.

Effect of Sumukti on Psychological Dependence

Charaka acharya says that, besides untoward effect of alcohol person continues drinking to get immense pleasure which is attained only through alcohol.²² Hence, there is excessive desire towards drinking [craving] which leads to persistent use, loss of control and negligence to alternate pleasure or work [saliency]. It is observed in this study that there was *vibhrama* [distortion] of *mana* [mind], *buddhi* [intelligence], *bhakti* [desires] and *Sheela* [behavior] which might be due to uncontrolled *mano vegas* [urges]. Compound *Sumukti* has *Medhya* [nootropic] drugs like *mandookaparni*, *yastimadhu*, *guduchi* and *ashwagandha*. These drugs act at the level of mind and helped the patients to control the *vegas* (urges) which in turn helped to reduce the *vibhramas*.

Meaning of *medha* is to have proper correlation and understanding about the knowledge of the existing objects. Without *Medha*, knowledge cannot be understood. *Dhi*, *Dhriti* and *Smriti* are the main faculties of *medha*. *Medhya* drugs have their action on these 3 faculties. Thus, the compound helped the patients to take a good decision which was beneficial to him which might have the reason there was reduction in the psychological symptoms like craving, loss of control, saliency and persistent use.

Body and mind have inseparable relation. So, without vitiation of both *manasika* [mental ailments] and *sharirika Doshas* [physical ailments] there will not be complete manifestation of symptoms in *madatyaya* especially in alcohol dependence. Charaka acharya tried to correlate *mano doshas* with *sharirika dosha* by saying desire, sadness, and fear can aggravate *vata* and anger can aggravate *pitta dosha*.²³ That may be the reason most of time patients will be anxious to avoid withdrawal symptoms due to which they will go for persistent use of alcohol and get loss of control over it. So, by reducing the *sharirika* [physical] symptoms it will help the patients to control his alcohol intake behavior i.e. *Manovega* and vice versa. Compound *sumukti* has drugs which reduce both *sharirika* and *manasika dosha* which we

already discussed in physical dependence. Hence, it acted on both body, mind and reduced the symptoms effectively.

Up to 80 percent of alcoholic people report symptoms of sadness or anxiety during the course of their disorder. Experimental studies show that *Withania somnifera* and *Centella asiatica* are very much effective in oxidative stress and these both are good anxiolytic drugs.²⁴ *Centella asiatica* [*mandookaparni*], *Withania somnifera* [*ashwagandha*], *Tinospora cordifolia* [*Guduchi*] and *Glycyrrhiza glabra* [*yastmadhu*] has potential nootropic effect.²⁵ In another studies, it found that *Centella asiatica* has neuroprotective action.²⁶

Conclusion

There was statistically significant effect seen in subjective parameters with more than 60% improvement. Compound found effective in all symptoms hence can be a choice of medicine in alcohol dependence especially in withdrawal stage.

Conflict of Interest: None

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