



Kharjuradi Mantha Syrup an Elixir Compound in Madatyaya (Alcohol withdrawal symptoms)

Dr. Arun M¹, Dr. Savitha HP²

¹Phd Scholar, Department of Kayachikitsa SDMT's AMC Terdal

²Professor, Department of Manasaroga, SDM College of Ayurveda and Hospital – Hassan

ABSTRACT: Madya is consider as alcohol in Ayurveda. Madya is mentioned in Brihatrayi and Laghutrayi. According to Ayurveda if Madya is taken in proper manner and dose act as nectar (Amrit). If it is taken in excess doses it produces Mada (acute alcoholism) Madatyaya or Panatyaya (chronic alcoholism) and Panavibhrama (Alcohol withdrawal syndrome). There is no single cause of Alcoholism. Alcohol withdrawal is a set of symptoms seen after the cessation of heavy usage of Alcohol lasts to 24 hours to 72 hours and need a proper care. The symptoms varies person to person like insomnia, nausea, vomiting, headache, hallucinations, tremors, seizures and even leads to death. Various treatment modalities like Shodana and Shaman explained in Ayurveda to treat Madatyaya. They need proper nutritional supplementation in proper manner and should provide immediate nourishment to control the condition. Here the combination of 7 drugs which are rich in vitamins nutrients and minerals explained in authenticate text book of Ayurveda made in to syrup form for easy administration and storage and which effective in Madatyaya.

KEY WORDS: Madatyaya, Alcohol Withdrawak syndrome, Kharjuradi Mantha Syrup.

INTRODUCTION

Madya is consider as alcohol in Ayurveda. Madya is mentioned in brihatrayi and laghutrayi. According to Ayurveda if Madya is taken in proper manner and dose act as nectar (Amrit). If it is taken in excess doses it produces Mada (acute alcoholism) Madatyaya or Panatyaya (chronic alcoholism) and Panavibhrama (Alcohol withdrawal syndrome). There is no single cause of alcoholism. In fact, there are dozens of risk factors including both internal and external factors that play a role in the development of an alcohol addiction. Internal factors include genetics, psychological conditions, personality, personal choice, and drinking history. External factors include family, environment, religion, social and cultural norms, age, education, and job status.

People found their all solutions by various addictions and one of which very common is that of alcohol. There are mainly two types of addiction, first is psychological and second one is physical. In psychological addiction the individual can become mentally dependent on certain substances or behaviours. It arises from the mind or emotions. And if the individual tries to stop the consumption of the substance, he may not be able to do it suddenly due to the psychological symptoms like craving. In physical addiction the individual develops increased tolerance for substance, and they will experience physical symptoms if they try to stop or reduce their intake. These physical symptoms are more commonly referred to as withdrawal symptoms. Alcohol withdrawal symptoms occur when addicted individual reduces or stops alcoholic consumption. The withdrawal syndrome is largely a hyper excitable response of the central nervous system due to lack of alcohol.

Typical symptoms of withdrawal include nausea, vomiting, tremors, anxiety, agitation, paroxysmal sweating, disorientation, headache and hallucination.

Definition of Alcohol withdrawal syndrome-

Alcohol withdrawal syndrome is a condition in which the individual experience a set of symptoms after the cessation of the unconditional usage of alcohol, lasts 24 hours to 72 hours. When untreated leads to severe set of symptoms to life threatening condition.

Symptoms of alcohol withdrawal-

The spectrum of withdrawal symptoms and the time range for the appearance of set of symptoms after cessation of alcohol use. Generally, the symptoms of alcohol withdrawal relate proportionately to the amount of alcoholic intake and the duration of a patient's recent drinking habit.

Minor withdrawal symptoms can occur while the patient still has a measurable blood alcohol level. These symptoms may include insomnia, mild anxiety, and tremulousness. Patients with alcoholic hallucinations-visual, auditory, or tactile hallucinations but otherwise have a clear sensorium.

Alcohol withdrawal delirium, or delirium tremens, is characterized by clouding of consciousness and delirium. Episodes of delirium tremens have a mortality rate of 1 to 5 percent. Risk factors for developing alcohol withdrawal delirium include concurrent acute medical illness, daily heavy alcohol use, history of delirium tremens or withdrawal seizures, older age, abnormal liver function, and more severe withdrawal symptoms on presentation.

Diagnostic Criteria for Alcohol Withdrawal¹

Once a diagnosis of Alcohol Withdrawal has been made and assess the severity of withdrawal and the risk for associated complications. The best validated tool for such an assessment is the Clinical Institute Withdrawal Assessment for Alcohol, revised (CIWA-Ar)². This instrument, which rates 10 withdrawal features, can be administered in only a few minutes and repeated when necessary. A total score of 15 or more points indicates that the patient is at an increased risk and need a therapeutic intervention.

- A. Cessation of (or reduction in) alcohol use that has been heavy and prolonged.
- B. Two (or more) of the following, developing within several hours to a few days after criterion A:
 1. Autonomic hyperactivity (e.g., sweating or pulse rate greater than 100 beats per minute)
 2. Increased hand tremor
 3. Insomnia
 4. Nausea or vomiting
 5. Transient visual, tactile, or auditory hallucinations or illusions
 6. Psychomotor agitation
 7. Anxiety
 8. Grand mal seizures
- C. The symptoms in criterion B cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.

Mechanism of alcohol withdrawal-³

Alcohol withdrawal syndrome is mediated by a variety of mechanisms. The brain maintains neurochemical balance through inhibitory and excitatory neurotransmitters. The main inhibitory neurotransmitter is γ -amino-butyric acid (GABA), which acts through the GABA-alpha (GABA-A) Neuroreceptor. One of the major excitatory neurotransmitters is glutamate, which acts through the N-methyl-D-aspartate (NMDA) Neuroreceptor.

Alcohol enhances the effect of GABA on GABA-A Neuroreceptors, resulting in decreased overall brain excitability. Chronic exposure to alcohol results in a compensatory decrease of GABA-A Neuroreceptor response to GABA, evidenced by increasing tolerance of the effects of alcohol.

Alcohol inhibits NMDA Neuroreceptors, and chronic alcohol exposure results in up-regulation of these receptors. Abrupt cessation of alcohol exposure results in brain Hyperexcitability, because receptors previously inhibited by alcohol are no longer inhibited. Brain Hyperexcitability manifests clinically as anxiety, irritability, agitation, and tremors. Severe manifestations include alcohol withdrawal seizures and delirium tremens.

Treatment of alcohol withdrawal-⁴

In Ayurveda the line of treatment according to the Dosha involvement. And mainly Shodana and shaman Aushadis used to treat various addiction condition. An be divided in to two Samanya chikitsa and Vishesha chikitsa.

Samanya Chikitsa

1. Doshanusara Chikitsa All the types of alcoholism are Tridoshaja, hence the physician should first treat the Dosha which is predominant there in. Otherwise in Alcoholism the treatment should be started from Kapha because it is predominantly situated flanked by Pitta and Vata.

Administration of Madhya (Madhya Prayoga)⁵

The diseases which arise from inadequate, improper and excess drinking of liquor get cured by the same if administered properly. Charaka explains more about the usage of this wine that Vayu obstructed in channels due to Dosha excited by wine produce intense pain in head, bones and joints. In such cases for liquefying the Dosha particularly wine should be given because of its properties like quick absorption, sharpness and hotness unlike of other remedial measures. Wine removes the obstruction of channels, carminates vata, improves relish and stimulates digestive fire.

Administration of Milk (Dugda Prayoga)⁶

After discontinuing wine, when Kapha is diminished, debility and lightness arises due to lightening (Langana, Pachana, Shodhana procedures and Shamana measures and Vata and Pitta becomes predominate in the patient inflicted by wine, so milk administration acts as a boon like rains for the tree which is extremely dried in summer. After some days milk also should be withdrawn slowly with substitutes of Pathya Dravyas. Psychological measures (Harshanakriya)⁷

Alcohol does not cause alcoholism without causing agitation of the mind and causing morbidity in the body hence exhilarating measures necessary. Beautiful parks, ponds, with lotus flower, good food and drinks, pleasing companions, garlands, perfumes, clean clothes, melodious music, entertaining parties, ample arrangement of talks, jokes and songs and beloved and submissive women etc. alleviate alcoholism.

Administration of drugs to cure alcoholic intoxication should be done after the lapse of seven or eight days; by this time the wine that is residing in unusual (wrong) channels becomes digested, such of the diseases which continues after period should be treated appropriately with drugs suitable for alcoholic intoxication

Visistha Chikitsa

1. Vataja Madatyaya - Chukra, Maricha, Ardraka, Dipya and Kusta with a little of Sauvarchala should be taken with Madya, Prtvika, Dipyaka, Mahaushada and Hingu along with Sauvarchala salt should be dispensed as beneficial recipe. Pana prepared with Amra Phala, Amrataka, Dadima and Matulunga should be given. Or the patient should use meat soup (Mamsa Rasa) etc. mixed with Matulunga Swarasa and Mamsa of marshy animals added with Sugandi Dravyas (flavouring agents).⁸

2. Pittaja Madatyaya - Madhya should be mixed with Kashaya prepared with Madura Rasa Dravyas along with Madhu and Sita and the good flavours are beneficial. After drinking this Madhya, one should take Ikshu Rasa, it should be brought out completely by vomiting. Lava Mamsa Rasa, Aina and Tittira, or Mudga Rasa with Sita and Ghruta should then to be given to drink for benefit.

3. Kaphaja Madatyaya - Induce Vamana by the help of Madhya with Bimbi and Vidula Swarasa. Mamsa Rasa of wild fatty animals with bitters and pungent should be given; further soups prepared with pulses is beneficial.⁹

4. Sannipataja Madatyaya - Due to all three Dosas measures to counteract all of them should be undertaken, however, in case with dual Dosas involvement, having assessed both of them the main one should be treated first. In addition, all other beneficial measures, as also those which please the mind are described should be carried out.¹⁰

Paramada Chikitsa¹¹ - Kasmarya, Daru, Vida, Dadima and Pippali, along with Draksha, should be added to water and drink should be made, to which Bijapuraka juice should be added and if this is quickly taken as drink the condition of Paramada gets totally received in no time. Draksha, Sita, Manduka, Jiraka, Dhanya, Trivrit should be similarly prepared and taken as a drink. In the same way Mamsa Rasa of wild animals with Sauvarchala and citrus fruit juices should be taken. A bath water processed with Bharangi is also beneficial.

Panajirna Chikitsa Iksvaku, Dhamargava, Vrksaka and Kakahvayo, Damambarika should be cooked with milk and given in an Anjali Pramana to induce vomiting. Further in the evening the patient of Panajirna should drink wine again, (to restore the Agni, i.e. the digestive power.)¹²

Panavibrama Chikitsa

1. Syrup prepared from Draksa, Kapitha, citreous fruits and Dadima with lot of Madhu and Sita cures Panavibrama.

2. In the same way, Amrataka and Kola should be used as syrup.

3. Syrup prepared from Kharjura, Vetraka, Karira, Draksa, Trivrit and Sriparni with Sita should be used in the cold state.

4. Tender leaves of latex tress, Bisa, Jiraka, Nagapuspa, Patra, Ilvalu, Sitasariva, Padamaka, Amkarata, Bhavya, Karamarda, Kapitha, Kola, Vrksamla, Vetrphala, Jiraka and Dadima should be taken after adding Yasti and Utphala as a cold drink.¹³

Before initiating any interventions, the first step in managing a patient's withdrawal is to assess thoroughly the patient's condition. This assessment should include an evaluation of the presence of coexisting medical and psychiatric conditions, the severity of the withdrawal symptoms, and the risk of withdrawal complications. Moreover, reassessment of the withdrawal symptoms at regular intervals until they have resolved can help guide treatment as well as encourage the clinician to monitor the patient for the development of complications that might require more intensive observation or treatment.¹⁴

Abnormalities in fluid levels, electrolyte levels, or nutrition should be corrected. Intravenous fluids may be necessary in patients with severe withdrawal because of excessive fluid loss through hyperthermia, sweating,

and vomiting. Intravenous fluids should not be administered routinely in patients with less severe withdrawal, because these patients may become overhydrated.

Routine administration of magnesium sulfate has not been shown to improve withdrawal symptoms, but supplementation is appropriate if a patient is hypomagnesemic. Multivitamins and thiamine (100 mg per day) should be provided during treatment for alcohol withdrawal. If intravenous fluids are administered, thiamine (100 mg intravenously) should be given before glucose is administered, to prevent precipitation of Wernicke's encephalopathy.

Aims and objectives –

To analyse the effect of Kharjuradi mantha syrup in Madatyaya (Alcohol withdrawal syndrome)

Materials and methods –

Drugs used to prepare the kharjuradi mantha syrup

Kharjura¹⁵ :

Latin name:- Phoenix sylvestre

Family:- Arecaceae

Rasa:-Madhura

Guna:-Snigdha, guru

Virya:- Sheeta

Vipaka:-Madhura

Rogagnata:-Hridvikara, mada-murchha ,madyobhutavikara, jvaradaha,kshaya-urakhshata.

Action on Tridosha- Vatapittashamaka

Chemical composition:- The crude extract of leaf contains alkaloids, flavonoids and phenols. Fruit contains proteins 1.2%, carbohydrate33.8%, fibres3.7%, minerals1.7%, calcium0.22%and phosphorus 0.38%, nira contains vitamins B and C. it is a rich source of vitamin B

Draksha¹⁶

Latin name:-Vitis vinifera

Family:-Vitaceae

Rasa:-Madhuraamla

Guna:- Snigdha, guru, mridu

Virya:-Sheeta

Vipaka:-Madhura

Chemical composition:- Fruits contain flavonoids (quercetin) anthocyanins, proanthocyanins, organic acids, tannin, mineral salts and vitamins, fruit skin is rich in resveratrol which is a derivative of stilben. Fruit juice contains malic, tartaric and racemic acid along with 0.05% of ash.

Rogagnata:-Madatyaya, kamala, pandu, mastiskadourbalya, murchha, hriddourbalya,trishna, daha, sammoha, santapa, vibandha.

Action on tridosha- Vatapittashamaka

Vriksamala¹⁷

Latin name:-Garcinia indica

Family:-Guttiferae

Rasa:-Amla, madhura,

Guna:-Laghu, Ruksha

Virya:-Ushna

Vipaka:-Amla

Chemical composition:— Consists of bioactive molecules including xanthenes, flavonoids, Benzophenones, lactones and phenolic acids. Seeds of the fruit yield a valuable edible fat known as kokam butter. Fruits acid contains malic acid, tartaric acid and citric acid.

Main actions:— These include its usefulness as an infusion, in skin rashes caused by allergies, to relieve sunstroke, remedy for dysentery, an appetiser, liver tonic, to allay thirst and as a cardio tonic.

Rogagnata:-Aruchiagnimandhya, udarashula, gulma, hridroga.

Action on tridosha:-Kaphavatashamaka

Amlika¹⁸

Latin name:-Tamarindus indica

Family:-Fabaceae (papilionaceae)

Rasa:-Amla

Guna:-Guru, Ruksha

Virya:-Ushna

Vipaka:-Amla

Chemical composition:— Fruit contains invert sugar, citric acid, oleic acid, linoleic acid, volatile oils (geraniol, limonene), pipelic acid, lupeol, orientin, vitamin B3, vitamin C, vitexin, phenylalanine, leucine, potassium, Campesterol, β -amyrin, β -sitosterol, Tannins, saponins, glycosides. tartaric acid 5%, citric acid 4%, malic acid, acetic acid, potassium tartarate 8%, sugar 25-40% gum and pectin. — Seeds contain pectin, fat, carbohydrate 63-72%, albuminoids and fibers and alkalies substances consisting phosphorus and nitrogen. — Pods or fruit pulp also contain some oxalic acid. Seeds coat contain a fixed oil, tannic acid and some insoluble substances.

Rogagnata:—Hridvikara, raktavata, agnimandhya, vamana, aruchi, vatavyadhi, arochaka-bhaktadvesha, gulma-arsaudarashula, vibandha, sothavedanayuktavikara, abhighata.

Action on tridosha:-Apakvaphala-vatashamaka, kaphapittavardhak, raktapittakaraka. —Pakvaphala-pitta shamaka, kaphavatashamaka.

Dadima¹⁹

Latin name:-Punica granatum

Family:-Punicaceae

Rasa:-Madhura, kashaya, Amla

Guna:-Laghu, snigdha

Virya:-Anushna

Vipaka:-Madhura

Chemical composition:— It contains numerous valuable ingredients such as flavonoids, ellagitannin, punicalagin, ellagic acid, vitamins and minerals. The principal constituents including punicalagins and ellagitannin are responsible for immeasurable health benefits due to its strong antioxidant activity. Additionally, constituents of pomegranate show health promoting effect through the modulation of physiological and biochemical pathways. Pomegranate peel is a rich source of tannins, flavonoids and other phenolic compounds. Its juice also contains various constituents such as polyphenols, tannins, anthocyanins, including vitamin C, vitamin E, and lipoic acid and punicalagin.

Rogagnata:—Hridroga, raktavikara, mashtishkadourbalya, mashtishkavikara, aruchi, agnimandhya, atisara, pravahika, urdhvaroga, sukradourbalya, jvarapathya

Action on tridosha- Tridoshaghna (madhuraphala) kinchitpittakara (madhuramlaphala), kaphavatashamaka-pittala (amlaphala).

Parushaka²⁰

Latin name:-Grewia asiatica

Family:-Tiliaceae

Rasa:-Madhura, amla, kashaya

Guna:-LaghuSheeta

Virya:-Amla

Vipaka:-Madhura

Chemical composition:— Fruits are a rich source of nutrients such as proteins, amino acids, vitamins, and vitamins and contains various bioactive compounds like anthocyanins, tannins, phenolics and flavonoids. The seeds of parushaka fruits contain oil. — Bark contains mucilaginous substance which is reported to contain various chemical substances. The presence of triterpenes viz. lupeol, lupenone, fridelin and botulin in the stem bark of *Grewia asiatica* after successive extraction with light petrol. Fruits contain acid as citric acid 2.8%, sugar (sucrose) 11.7% and vitamin C trace.

Rogagnata:—Madatyaya, bhrama, daurbalya, hridaroga, hridaaurbalya, paittikjawara, daha, kshaya, shula, shukradosha, shopha, aruchi, agnimandhya.

Action on tridosha-Pittashamana, vatakaphahara

Amalaki²¹

Latin name:-Emblia officinalis

Family:-Euphorbiaceae

Rasa:-Pancharasa Amla

Guna:-Laghu, ruksha, sheeta

Virya:-Sheeta

Vipaka:-Madhura

Chemical composition:—Emblia officinalis reported to possess bioactive compounds like tannins, flavonoids, saponins, terpenoids, ascorbic acids and fruit is rich source of vitamin C. Seeds contain fixed oil, phosphatides and an essential oil. Fruit, leaves and bark are rich in tannin. Fruits contain gallic acid, tannic acid, resinous matter, glucose, albumin, cellulose and minerals specially calcium, other than good content of vitamin C and other substances.

Rogagnata:—Mashtishkadaurbalya, nadidaurbalya, indriyadaurbalya, yakritaplihavikarapandu, hridaroga, raktavikara, aruchi, kasa-shwasa-yaksham, daurbalya, kshaya, shoshadrashtimandhya, udararoga, vibandha, aruchi, agnimandhya, amlapitta.

Action on tridosha—Tridosahara, pittashamaka

Preparation of Kharjuradi Mantha Syrup

Mantha is that which is prepared by using coarsely powdered drug in one pala quantity and mixed with 4 pala of cold water and churned well. Kharjura, Mrdveeka, Vrksamla, Amlika, Dadima, Paroshaka and Amalaki will be taken in equal quantity and added with four times of water with that of the total quantity of drugs and continued churning till this mixture attains its desired consistency. If desired, sugar, jiggery or honey may also be mixed with it for making the same more palatable. ²²

To maintain uniformity of preparation, provide easy to consume medicine and help in cost effectiveness, Kharjuradi mantha will be prepared in the form of syrup. One part of prepared mantha will be added with two

parts of sugar and heated on slow fire. When the mixture attains syrup consistency, heating will be stopped. After complete cooling the filtered syrup will be bottled, stored and dispensed.²³

Probable mode of Action²⁴

Maximum contents of the Kharjuradi mantha syrup drugs are having Guru and Snigdha Guna. The Guru Guna of the drugs act as Brimhana and Balya for the body. They do Srota-uplepa, Triptijanana and Vatahara. These Guna increases the stability of the body and does Ojovardhana. Snigdha Guna increases Snehana, Mriduta, Adrata in the body. It acts as Vatahara, increases Varna, Bala of Shariradhatu, Malapravartaka, Rasayana and Vajikara which helps to cover the damage occurred to Dhatu and different organs of the body due to Mada.

Schematic representation showing the effect of Kharjuradi Mantha.

Guru→Prithivi + Jala →Guru Snigdha and Sheeta→Brumhana, Balya, Vatahara,Srotoupalepa→Provide stability to vitiated Doshas and relief in the symptoms of Madatyaya and does Ojovardhana.

Snigdha→Jala →Snigdha and Sheeta →Snehana, Mriduta, Vatahara, Triptijanana, Varnya, Dhatuvarhaka, Balya, Vajikara →Provide stability to vitiated Doshas and relief in the symptoms of Madatyaya and does Ojovardhana.²⁵

DISCUSSION

It is very important to have the knowledge of pathogenesis of Madaatyaya and alcohol use disorder for better understanding of the rationality behind selecting the formulation. Due to the qualities of Madhya which are contrary to Ojas, chronic intake of Madhya against rules and regulations will result in OjoNasha and manifest as disease condition known as Madatyaya. The symptomatology will be varying depending upon the predominance of Dosha and constitution of an individual etc., but Madatyaya is always Sannipataja. Here for Samprapti Vighatana, we selected Kharjuradi Mantha syrup which is having the properties like Agnideepana, Sroto Shodhana, Tarpana and Tridosahara. Kharjuradi Manthais having the following above desired qualities. Therefore, administration of the Kharjuradi Mantha syrup was considered as more suitable in comparison with other formulations. Kharjuradi Manthawas given in the subjects of Madatayi with the dosage following classical references (Sharangadhara Samhita, dosage of Mantha is Dvipalam i.e. nearly 60 ml) for duration of 7 days in two divided doses. The Aushadha Sevana Kala was Adhobhaktai.e. After food that was decided based on the reference of Sharangadhara. The intervention was conducted for duration of 7 days because concept of Dhatu Parinamana which is the basic entity of OjoUtpatti with Dhatu Poshana Requires a minimum of 7 days' time period.

Discussion on probable mode of action of the drug Maximum contents of the trial drug were having Guru and Snigdha Guna. The Guru Guna of the drugs act as Brimhana and Balya for the body. They do Srota-uplepa, Triptijanana and Vatahara. These Guna increases the stability of the body and does Ojovardhana. Snigdha Guna increases Snehana, Mriduta, Adratin the body. It acts as Vatahara, increases Varna, Bala of Shariradhatu, Malapravartaka, Rasayanaand Vajikara which helps to cover the damage occurred to Dhatu and different organs of the body due to Mada.

CONCLUSION

Here for Samprapti Vighatana, we selected Kharjuradi Mantha syrup which is having the properties like Agnideepana, Sroto Shodhana, Tarpana and Tridosahara. Guna and Karma Samanyata of Kharjuradi Mantha with the Oja caused Vruddhi in the Guna and Karma of Ojas which helped in relieving the Madataya

Laxanas. The increased elements are treated by opposite Gunas but in case of Ojas, Vruddhi of Ojas is always considered as the beneficial one. Though Madhya is having Opposite Guna to that of the Ojas it cannot be administered. Because Chikitsa is never aimed at Ojo-Kshaya and it is always aimed at bringing Samyata of Ojas, So Kharjuradi Mantha syrup was selected, which was found to be potent enough in increasing the Ojo Guans in the clinical study. Kharjuradi Mantha syrup helping in relieving the Laxana of Madatyaya (Alcohol Withdrawal Symptoms).

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