



## Research Article

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### A CLINICAL STUDY ON EFFECT OF PUNARNAVADI GHRITA ON MADATYAYA WITH SPECIAL REFERENCE TO WITHDRAWAL SYMPTOMS

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#### ABSTRACT

Madya (alcohol), if taken according to the rules and regulations it produces exhilaration, energy, happiness, nourishment, good health, excellent virility and pleasant intoxication. The disease caused by its abuse is called as Madatyaya (alcoholism). It has clinical symptoms similar to Alcoholism. In the present modern era the youth and middle age generation easily gets attracted towards alcohol to reduce tension and stress ultimately blocking social and economic development and even threaten the health services. Alcoholic patients try to come out of the condition but withdrawal symptoms do not let them to do so. Hence the present study has been done to manage the "Madatyaya" with special reference to withdrawal symptoms in which clinical efficacy of "Punarnavadi Ghrita" was studied on 30 patients of withdrawal symptoms (divided in 3 groups i.e. A, B and C) for 30 days. Hb gm%, TLC, DLC, ESR, LFT were also done to assess the efficacy of the drug. Group-A was treated with the medicine provided by the Drug De-addiction centre, which was significant (P<0.05) statistically in subjective parameters. Group-B was given the medicine of Drug De-addiction centre and Punarnavadi Ghrita simultaneously, which showed highly significant result (P<0.001) in both subjective and objective parameters. Group-C treated with Punarnavadi Ghrita, showed significant (P<0.05) results in objective parameters. Follow-up was on 15<sup>th</sup> day and after treatment. Our study revealed that the test drug Punarnavadi Ghrita along with medicine of Drug De-addiction centre is effective in treatment of withdrawal of Madatyaya (alcoholism). Hence it can be taken as a complementary medication for Madatyaya.

**Key words:** Madatyaya, Drug De-addiction, Punarnavadi Ghrita

#### INTRODUCTION

Drink which causes or produces Madya or intoxication is called Madya.<sup>1</sup> Intake of which produces disturbance of the intellect faculty by virtue of its Tamoguna is called Madkari Dravya e.g. Madya (alcohol), Sura etc.<sup>2</sup> Acharya Charaka praises Madya as the destroyer of sorrow, unhappiness, fear and distress.<sup>3</sup> If Madya is taken according to the rules and regulations it produces exhilaration, energy, happiness, nourishment, good health, excellent virility and pleasant intoxication.

A strong poison when used in its impure form and without knowledge shows a fatal effect on the body but if used after purification by proper administration it acts as a best drug.<sup>4</sup> Similarly alcohol, one such fatal poison if used appropriately acts as a aushadhi (medicine) – Agnivardhak (improves digestion), Balavardhak (energetic), Hridaya (beneficial for heart).<sup>5</sup> According to Ayurveda there are 10 gunas (properties) of poisons by which it act on body. These are Ruksha, Ushna, Tikshna, Sukshma, Ashu, Vyavayi, Vikasi, Vishada, Laghu and Apaki (Sushrut) & Anirdeshya rasa (Charaka) which are exactly similar with all Gunas (properties) of Madyas except Apaaki or Anirdeshya rasa. Instead of Apaaki or Anirdeshya rasa, Madya has Amla rasa.<sup>6,7</sup>

As per the Ayurvedic texts the disease caused by the abuse of Madya (alcohol) is called as Madatyaya (alcoholism). The Madatyaya has clinical symptoms similar to Alcoholism. The samanya lakshanas (general symptoms) of madatyaya

mentioned in Ayurveda<sup>8</sup> can be correlated with the withdrawal symptoms of chronic alcoholism up to some extent.<sup>9</sup> Shareera Dukham (Excruciating pain in the body), Balavat Sammoha (unconsciousness), Hridaya Vyatha (discomfort in the chest region), Aruchi (anorexia), Pratata Trishna (incessant thirst), Jvarah Sheetoshna Lakshana (fever having the characteristics of cold and heat), Shirah Parshvathi Sandheenam Vidyuttulya Cha Vedana (severe pain in the head, sides of the chest, bones and joints), Atibala Jrimbha (severe yawning), Sphuranam (horripilation), Vepanam (tremors), Shrama (fatigue), Urovibandha (feeling of obstruction in the chest), Kasa (cough), Hikka (hiccup), Shwasa (dyspnoea), Prajagarana (insomnia), Shareera Kampa (trembling of the body), Karnakshimukharoga (diseases of ears, eyes and mouth), Trikagraha (stiffness of sacro-iliac joint), Chardi, Atisara and Hrilasa of Tridoshatmaka (vomiting, diarrhoea and nausea), Bhrama (giddiness), Pralapa (delirium), Roopanamasastanam Darshanam (visual hallucinations), Vyakulanamashastaanaam Svapnaanam Darshanani (dreaming of terrifying and inauspicious objects)

Madatyaya is mentioned as tridoshja vyadhi in Ayurveda<sup>10</sup> and there are number of both medicinal and non-medicinal therapeutic measures described in Ayurvedic texts. Among them Acharya Chakradtta has mentioned the use of Punarnavadi Ghrita in the management of Madatyaya<sup>11</sup>, which was taken for the present study. Its contents i.e. Punarnava (*Boerhavia diffusa*), Yashtimadhu (*Glycyrrhiza glabra*), Go-dugdha (Cow milk) and Go-ghrita (Cow ghee) act as a Rasayana and have the potency and properties which directly act on the sign and

symptoms of Samanya Madataya mentioned in Ayurvedic texts. In the present modern era the youth and middle age generation, immediately and easily gets attracted towards alcohol to reduce tension and stress. The continuous intake of Madya results in imbalance of three doshas : Vatta, Pitta & Kapha. Hence Madataya is called as Tridoshaja vayadhi<sup>10</sup>. Keeping in view, the prevalence of the disease in the society and to execute with effective but economical and complication free modality of treatment, the present study has been undertaken.

#### Aim and objectives

To assess the clinical efficacy of "Punarnavadi Ghritta" in Madataya

#### MATERIALS AND METHODS

##### Selection of drug

In the present study the drug 'Punarnavadi Ghritta' was selected with the reference of Acharya Chakradatta<sup>11</sup>.

##### Preparation of the Drug

The drug was prepared according to procedure as mentioned in the classical text<sup>11</sup>, in the pharmacy of Uttaranchal Ayurvedic College, Dehradun, under the supervision of Ras Shashtra and Dravya guna Department. Punarnava (*Boerhavia diffusa*) kwath (8 part), Yashtimadhu (*Glycyrrhiza glabra*) kalka (1 part), Gogudh (4 part), Go-ghritta (4 part). The first three ingredients were mixed together and the go-ghritta was to make sidhh (medicated) from them on low fire.<sup>11</sup>

##### Selection of patients

The selection criteria were based on the signs and symptoms of Madataya described in the Ayurvedic texts. The Alcohol Use Disorder Identification Test (AUDIT) is also used as a screening test of the patients as per the guidelines of W.H.O. Present study was carried out in accordance with ethical principles by following International conference of Harmonization-Good Clinical Practices Guidelines (ICH-GCP).

##### Patient criteria

###### Inclusion criteria

- Patient of age group 18 years to 45 years.
- Patients those having signs and symptoms of Madataya as mentioned in Ayurvedic texts.
- The Alcohol Use Disorder Identification Test (AUDIT) was used for the screening of the alcoholic patients.
- Patients having drinking history of less than 10 years.

###### Exclusion criteria

- Occasional drinkers.
- Patients in emergency condition.
- Patients having chronic disorders.

###### Discontinuing criteria

- Any other acute illness develops during the trial.
- Uncontrolled cardinal features.
- Patients not willing to continue

##### Place of study

After taking written, informed consent of patient total 30 patients were taken from the Jagrati Foundation, Drug De-addiction, Counselling and Rehabilitation centre, Dehradun, (U.K). Medicines were given to the patient and they were also advised for early morning yoga and exercise in the evening.

Along with this, group counselling sessions were also held as per their follow-up schedule.

##### Plan of study

The 30 selected patients was divided into following three groups-

- Group-A: 10 patients treated with medicine given by the Drug De-addiction centre.
- Group-B: 10 patients treated with the medicine given by the Drug De-addiction centre and Punarnavadi Ghritta simultaneously.
- Group-C: 10 patients treated with Punarnavadi Ghritta with dose 10 ml. in morning and evening for 30 days

**Parameters for Evaluation:** Assessment was done on following parameters:

- (a) Symptomatic Improvements – Subjective Parameters
- (b) Laboratory investigations – Objective Parameters

##### Symptomatic Improvements

In the present study the particular symptoms of Madataya (alcoholism) was taken which were present in the patients and these were assessed on the basis of a self prepared gradation index.

##### Gradation Index

Features	Score
<b>Daha (Burning sensation)</b>	
Absent	0
Occasionally Present	1
Frequently Present	2
Continuously Present	3
<b>Atisaara (Loose stools)</b>	
Absent	0
Less than 4 Loose Stools per day	1
4 to 8 Loose stools per day	2
More than 8 Loose Stools per day	3
<b>Sweda (Sweating)</b>	
Absent	0
Sweating over forehead only	1
Sweating in axilla and body folds	2
Profuse sweating over whole body	3
<b>Prajagrana (Insomnia)</b>	
Sleep of more than 8 hours a day	0
Sleep of 6 to 8 hours a day	1
Sleep of 4 to 6 hours a day	2
Sleep of less than 4 hours a day	3
<b>Sharirkampa (Tremors)</b>	
Absent	0
Occasionally present	1
Present but not disrupts activities	2
Disrupts activities	3
<b>Trishana (Thirst/Dehydration)</b>	
Absent	0
Occasionally present	1
Thirst relieved after drinking water	2
Thirst not relieved even after drinking water	3
<b>Chardi (Vomiting)</b>	
Absent	0
2 times in a day	1
4 times in a day	2
> 4 times in a day	3

<b>Aruchi (Tastelessness)</b>	
Absent	0
Occasionally present	1
Aruchi even towards good food	2
Aruchi towards favorite food	3
<b>Pralapa (Irrelevant speech) :</b>	
Normal speech	0
Occasionally irrelevant speech	1
Frequently irrelevant speech	2
Continuously irrelevant speech	3
<b>Bhrama (Hallucinations)</b>	
Absent	0
Occasionally present	1
Frequently present	2
Continuously present	3

**Laboratory investigations**

The following blood tests were performed of every patient before and after the completion of the trial to assess the efficacy of the drug.

<b>Laboratory Investigation</b>
Hb gm %
TLC (Total Leukocyte Count)
DLC (Differential Leukocyte Count)
ESR (Erythrocyte Sedimentation Rate)
LFT (Liver Function Test)
SGOT
SGPT
Total Bilirubin
Direct Bilirubin
Indirect Bilirubin

**Assessment of Improvement on the basis of Sign and Symptoms**

Marked Relief:- More than or equal to 75% relief in sign and symptoms.

Moderate Relief:- 50 to 74% relief in sign and symptoms.

Mild Relief:- 25% to 49% relief in sign and symptoms.

No relief:- Below 25% relief in sign and symptoms.

**OBSERVATIONS & RESULTS**

Among the 30 patients taken for the study 46.6% of patients belonged to the age group of 28-37 years. 43.3% of patients were belongs to lower class. 33.3% started drinking alcohol at the age in between 21-25 years. 40% of patients started drinking due to group pressure. Maximum 50% patients consume alcohol before food. 60% patients drink alcohol with friends. 33.3% of patients took country liquor. 56.7% of patients consume 540-720 ml of alcohol daily. Insomnia is the withdrawal symptom which first appeared in the maximum 37.7% of patients. 86.7% of patients want to abstain alcohol. The data shows that with the use of alcohol maximum 36.7% of patients were addicted to smoking. 70% of patients have depression. The most common symptom found in patients was Aruchi (tastelessness) with 66.66%, followed by Prajagrana (insomnia) in 63.33% of patients, after that Sharirkampa (tremors) and Trishna (thirst/dehydration) was found in 60% of patients, then Atisara (loose stools) was found in 50% of patients, then Daha (burning sensation), Sweda (sweating), Bharama (hallucinations), was found in 46.66% of patients, Pralapa (irrelevant speech) in 40% of patients and Chardi (vomiting) was found in 33.33% of patients.

**Table 1: Subjective parameters**

Symptoms	Percentage Relief			F value	P value	Remarks
	Group-A	Group-B	Group-C			
Daha	46.15	87.5	55.55	2.59	0.043	<0.05
Atisara	62.5	90	66.66	0.71	0.050	<0.05
Sweda	50	71.42	50	0.97	0.039	<0.05
Prajagrana	37.5	75	46.15	1.68	0.205	>0.05
Sharirkampa	50	90	50	3.77	0.035	<0.05
Trishna	70	81.25	60	0.14	0.869	>0.05
Chardi	75	100	50	1.13	0.033	<0.05
Aruchi	60	80	40	2.59	0.093	>0.05
Pralapa	44.44	80	44.44	2.44	0.106	>0.05
Bhrama	50	100	44.44	3.72	0.037	<0.05

A.T.: After Treatment

**Table 2: Laboratory Investigations**

Lab. Tests	Percentage Relief			F value	P value	Remarks	
	Group-A	Group-B	Group-C				
Hb gm%	10.38	21.88	17.24	2.46	0.104	>0.05	
TLC	6.88	17.76	10.14	7.36	0.002	<0.05	
DLC	P	19.42	27.21	25.24	3.33	0.051	>0.05
	L	7.80	34.82	21.24	1.92	0.166	>0.05
	M	18.51	22.64	36.95	3.26	0.053	>0.05
	E	11.76	37.20	37.50	0.12	0.887	>0.05
	B	28.57	20	42.85	0.12	0.887	>0.05
ESR	9.90	34.31	27.95	9.76	0.0006	<0.001	
SGPT	18.41	41.21	27.15	14.35	0.0001	<0.001	
SGOT	42.44	60.76	50.13	24.21	0.0001	<0.001	
Total Bilirubin	35.34	59.12	40.77	35.25	0.0001	<0.001	
Direct Bilirubin	35.27	61.98	46.38	13.31	0.0001	<0.001	
Indirect Bilirubin	32.92	56.25	34.18	14.23	0.0001	<0.001	

A.T. – After Treatment, Hb- Haemoglobin, TLC- Total Leukocyte Count, DLC- Diffrential Leukocyte Count, P- Polymorphs, L- Lymphocytes, M- Monocytes, E- Eosinophils, B- Basophils, ESR- Erythrocyte Sedimentation Rate, SGPT- Serum Glutamic Pyruvic Transaminase, SGOT- Serum Glutamic Oxaloacetic Transaminase

**Table 3: Overall effect on three groups in 30 patients**

Results	Group-A	Group-B	Group-C	Number	Percentage
Marked Relief	2	9	1	12	40%
Moderate Relief	8	1	6	15	50%
Mild Relief	0	0	0	0	0
No Relief	0	0	3	3	10%
Total	10	10	10	30	100%

**DISCUSSION**

“Madatyaya” in general has been well described in all samhitas and samgrahas, but only Acharya Kasyapa has mentioned separately about the samanya samprapti (pathophysiology) of Madatyaya.<sup>12</sup>

When there is excessive intake of madya in Ajeerna by a Laghu Satva person it causes rasa dhatu doshti which results in Vatta & Pitta dosh prakopa in amashaya (stomach) and ultimately results in Kapha dosh prokopa, Oja Vikruti and Srotodushti which in the end results in Madatyaya.<sup>12</sup>

Madatyaya is considered as a Tridoshja vyadhi in Ayurvedic text<sup>10</sup>. It includes the involvement of dushtas i.e. rasa, rakta and

sanghya. Rasavaha, Raktavaha and Sangyavahi are the main srotas involved in Madatyaya and srotodushti is seen in the form of sanga. Main Adhishthana (place) of Madatyaya is Heart<sup>12</sup>, due to which patient suffers from ojakshaya, dhatukshaya, sharirkampa, pralapa, bhrama, agnivikriti (amavisha), anidra and many more sign and symptoms of madatyaya as discussed before. In the present study “Punarnavadi Ghritta” is selected because it contains maximum (8 part) Punarnava (*Boerhavia diffusa*) which is very effective in treatment of stress, inflammation, diabetes, nephrotic syndrome and also possess anti-inflammatory, diuretic and immunomodulatory activities<sup>13</sup>. Yashtimadhu (*Glycyrrhiza glabra*), Go-dugdha (Cow milk), Go-ghritta (Cow ghee), have Tridosha shamaka effect and increase oja, bala, dhatu by its branhana and rasayana effects.

**Table 4: Probable mode of action of the drugs may be explained as follows**

Drug	Rasa	Guna	Veerya	Vipaka	Doshagh-anta	Karma
Punarnava ( <i>Boerhavia diffusa</i> ) (Mutaraladi varga)	Madhur, Tikta, Kasaya	Laghu, Ruksha,	Ushna	Madhura	Tridosha shamaka	Deepana, Pachana, Anulomana, Mutral, Yakritutejaka, Shothhara, Vrishya, Rasayana, Raktavardhak
Yastimadhu ( <i>Glycyrrhiza glabra</i> ) (Chedanadi varga)	Madhura	Guru, Snigdha	Sheeta	Madhura	Vata-Pitta shamaka	Varnashotha, Medhya, Vatanulomak, Amlapitta, Raktavardhaka, Shleshamahar, Rakta-pitta shamaka,
Go-dugdha (Cow milk),	Madhura	Guru, Snigdha, Mridu,	Sheeta	Madhura	Vata-Pitta shamaka	Rasayana, Medhya, Varnya, Pranadharaka, Mutrakriccha, Raktapitta and Jeernajwaranashaka
Go-ghritta (Cow ghee),	Madhura	Guru, Snigdha	Sheeta	Madhura	Tridosha shamaka	Medhya, Rasayana, Veerya-Oja vardhak, Jwaranashaka, Urahkshata nashaka

When the chronic patient of alcohol, withdraw drinking after the regular ingestion of alcohol continued over months, he suffers from the alcohol withdrawal symptoms which are treated symptomatically. Punarnavadi Ghritta the trial drug of the study act as a rasayana for the patients. Its contents helps in removing toxins from the body, act as liver stimulant, brain tonic, ojavardhaka, balya, dhatuwardhaka. These also help in decreasing the side effects of modern medicine on liver and other organs of the body.

Group-B showed highly significant results in both parameters that may be due to the reason of ghrut kalpana (preparation) as ghrut acts as yogwahi<sup>14</sup> (can easily hold the properties of other drugs and become thousand times powerful and effective), due to which efficacy of medication of drug de addiction centre was increased. Also ingredients of punarnavadi ghrut are hepatoprotective, tridosh shamak, medhya, rasayana. Group-A showed significant results in subjective parameters that may be due to the reason that drug was effective only on symptoms not on the disease. Group-C showed significant results on objective parameters; reason behind that may be due to the miracle of ayurvedic drugs to act directly on the reason, particular site of the disease, not merely on the symptoms.

**CONCLUSION**

The present clinical trial concludes that Punarnavadi Ghritta if used along with modern symptomatic treatment of Madatyaya or Alcoholism give better results for the patients in treatment of

withdrawal symptoms and in improvement of objective and subjective parameters. So, we can say that the trial drug can be used as an effective supportive medicine for the Madatyaya.

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