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STUDY OF EFFICACY OF MATHIT YOG IN “MADATYAYA”.

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Abstract: Today Alcoholism is the main social problem, leading to mortality and morbidity in turn leads to burden on nation's economy, an increasing rate of alcohol consumption is a major problem with problem with extensive legal social, moral, ethical consequences all over the world irrespective of cultural, geographical, educational and economic difference. Increasing rate of alcohol consumption is a major problem today. *Madatyaya* is behavioural disorder characterised by repetitive and excessive consumption of alcohol affecting general health and socio-economic status of a person. *Oksatmya* according to Ayurveda, particular thing is made wholesome or completely agreeable, *Motil tail*, *godadhi*, *karpur* are easily available, cost effective and easy to prepare, hence decided to work on it. *Mathit yog* is one of the remedies for *madatyaya* to deal such social problem this study has been carried out. The present study was carried out by, *Mathit yog* as mentioned in *Madatyaya chikitsa* in Yogratanakar. It contains Til tail, karpur & karpur (bhimseni) 35 patients of were selected. Clinically it was observed that 30-45 years age, male, having Pittavaat prakriti were more prone to *Madatyaya*. Also, according to occupation (Labour and Unemployed), Duration of Addiction of Alcohol (10-15yrs) were more prone to *Madatyaya* due to etiological factors. Clinically the drug was more effective and no side effects of *Mathit yog* was seen.

Keywords: – Alcoholism, *Madatyaya*, *mathita yoga*, *Oksatmya*

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INTRODUCTION

Today *madatyaya* is the main social problem, leading to mortality and morbidity in turn leads to burden on nation's economy, to deal such social problem this study has been carried out. The fashion of alcohol drinking leading to a chronic alcohol consumption which is being recognised as a disease alcoholism. Alcoholism is a broad term used for problems with alcohol and is generally used to mean compulsive and uncontrolled used of alcoholic beverages, usually to the detriment of drinker's health, personal relationship and social standing¹. It is medically considered a disease, specifically an addictive illness. In psychiatry several other terms have been used, specifically "alcohol abuse", "alcohol dependence" which have slightly different definition. WHO define health i.e., "Health is defined as a state of physical, mental and social well-being not merely absence of diseases². Alcohol misuse has the potential to damage almost every organ in the body, including the brain. It seems that the worldly temptations to quench the thirst of senses and sensory motor organs people indulge into various activities which might give momentary delight but are harmful in long run, one of such activity is to consume intoxicating substances which are harmful to human body and mind. These activities are called as *Pragyaparadh*³. With the progress of time the concentration and the intoxicating effect of these beverages went on increasing and causing various ill effects within shorter period of the consumption.

Madatyaya is behavioural disorder characterised by repetitive and excessive consumption of alcohol affecting general health and socio-economic status of a

person. *Oksatmya* according to ayurveda, particular thing is made wholesome or completely agreeable⁴. Intake of alcohol in more concentration causes vitiation of *tridosha*, the *ruksha guna* of Alcohol increases *vata dosha* giving rise to symptoms like insomnia (*Anidra*) and *pralapa* (Irrelevant talk), *sharia kampa*, the pitta dosa causes *bhrama, daha, trushna* and the kapha dosha causes *vaman, arochaka* etc⁵. There is similarity of this condition described in Ayurveda with that of alcohol withdrawal syndrome. The cumulative toxic effect of chronic alcohol abuse can cause both medical and psychiatric problem, one who has alcoholism is called an alcoholic. To help those people who wants to withdraw the alcohol and maintain their health and socio-economic status is main goal of this study. Considering this disease not only personal but also social problem. Acharya Charak, sushrut, vagbhata, Yogratnakar and other samhita had described "*Madatyaya chikitsa*". *Mathit yog* is one of the remedies for *madatyaya*.⁷ Contents in this drug are Til tail, godadhi and karpur are easily available and cost effective and easy to prepare.

OBJECTIVES :

1. To study the efficacy of *Mathit yog* in *Madatyaya*.
2. To study the aetiology and *samprapti* ((pathogenesis) of *madatyaya* according to ayurvedic text in the context for alcoholism.

MATERIAL AND METHODS:

Study type: Open Randomized clinical study.

Sample size: Total number of patients for trial-35(thirty-five)

Study Design-

Total 35 patients were selected according to inclusion criteria. All the recorded data was

Drug: Mathit Yog 40 ml orally Pratah (before breakfast) and Sayam (at 4.00 pm) for 42 days

FOLLOW UP : Follow ups were assessed on 7th, 14th, 21st, 28th, 35th and 42nd day.

METHOD OF ASSESSMENT -

INCLUSION CRITERIA

1. Age -17 to 60 yrs having classical signs and symptoms of Madatyaya.
2. Patient meeting DSM - 4 criteria for Alcohol dependence.

DSM criteria:

1. Cessation of (or reduction in) alcohol use that has been heavy and prolonged.
2. Two or more after of the following developing within several hours to a few days after criteria 1.
 - a. Autonomic hyperactivity i.e. sweating or pulse >100
 - b. Increased hand tremors
 - c. Insomnia
 - d. Nausea or vomiting
 - e. Transient visual tactile or auditory hallucination or illusions.
 - f. Anxiety
3. The symptoms in criteria 2 cause clinically significant distress or Impairment in social, occupational or other important areas of functioning.
4. The symptoms are not due to a general medical condition and are not better accounted for by another mental disorder.

PARAMETERS OF ASSESSMENT

(1) Subjective assessment (Table No.1)

No.	Grade	0	1	2	3
1	Aruchi	Absent	Occasionally present	Frequently present	Continuously present

statistically examined and result was assessed.

Subject having abnormal values of one or more liver function tests in (SGPT, SGOT, S.bilirubin, increased & decreased level of sr.albumin)

EXCLUSION CRITERIA

1. Subjects having liver disorders other than Alcoholic Liver Diseases i.e. viral hepatitis, Drug induced hepatitis, genetic hepatic disease, CA liver, Amoebic liver abscess, malignancy, intoxication Hepatic encephalopathy.
2. Serum bilirubin level more than 20mg/dl.
3. Hyperbilirubinaemia due to congenital cause, Drug toxicity, AKT.
4. Obstructive pathology.

Withdrawal Criteria:-

The patient was withdrawn from the trial if there will be,

1. Occurrence of serious adverse events.
2. The investigator felt that the protocol had been violated / patient had become in-cooperative.
3. The patient was not willing to continue the trial / to follow the assessment schedule.

2	Chardi	No vomiting	Less than 3 episodes	3-6 episodes per day	More than 6 episodes per day
3	Prajagaran	Sleeping more than 8 hrs per day	Sleeping 6-8 hrs a day	Sleeping 4-6 hrs a day	Sleeping less than 3 hrs a day
4	Bhrama	Absent	Getting vertigo in position change	positional vertigo with vomiting able to sit	Cannot even seat
5	Hrullas	No	Nausea	Nausea with vomiting	Nausea with severe vomiting (>5-6 times)
6	Pralap	Normal talk	Relevant talk with 5-10 words/min	Relevant talk with 10-15 words/minutes.	Irrelevant talk.
7	Sharirkampa	Absent	Occasionally present	Present but not disrupting in daily Life	disrupting in daily life
8	Roopanam Asatyamchaiv Darshanam	Absent	Occasionally present	Present but not disrupting in daily Life	Can be seen without Sunlight also

CLINICAL EXAMINATION

Complete clinical examination from the point of view of Madatyaya will be done to diagnose and assess the Development of patient's disease condition.

DIAGNOSTIC CRITERIA

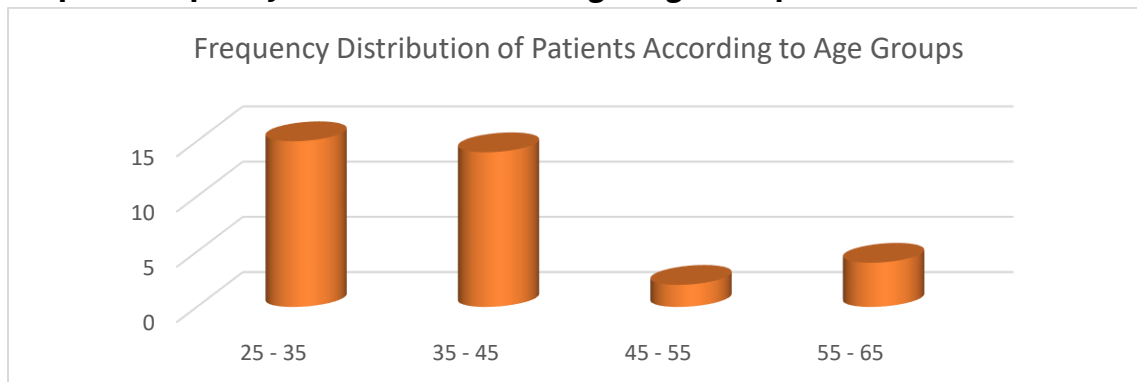
1. Person with classical symptoms of Madatyaya.
2. DSM 4 TR criteria (As specified in Inclusion criteria)

INVESTIGATIONS

1. Liver Function Test - SGPT (ALT), SGOT (AST), Serum bilirubin level.
2. Urine for - Bile salt and Bile pigment.
3. serum protein, Albumin - at the start and end of study.
4. USG Abdomen - at the start of the study.
5. Other investigations - Hemogram , ESR, BSL, BUL, SERUM CREATININE. - at the start and end of the study.

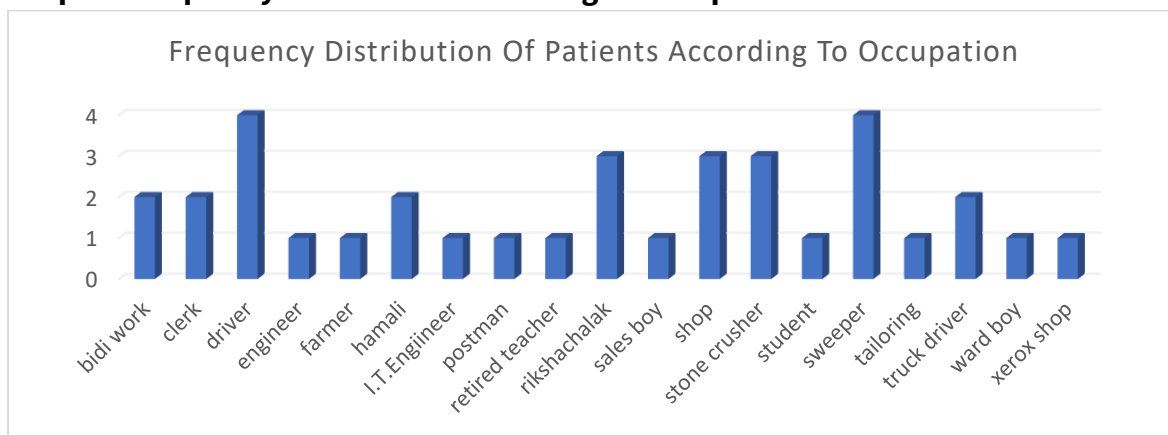
OBSERVATION AND RESULTS:

Graph.1 Frequency distribution according to Age Groups



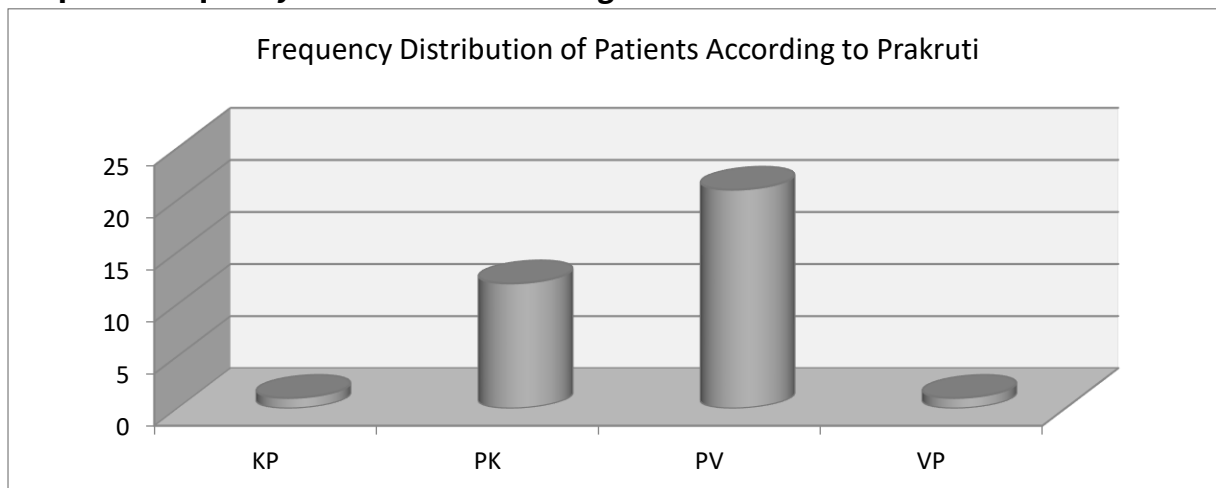
In the above distribution 42.9% patients were of 25-35 age group and 40% patients belong to 35-45 age group.

Graph.2 Frequency distribution according to Occupation



It is seen that in 35 patient there were 25 patients (71.42%) belongs to lower socioeconomic group, and 10 patients (28.57%) were belongs to middle class group. Thus the occupation and economic status play a major role in *Madatyaya*.

Graph.3 : Frequency distribution according to Prakruti

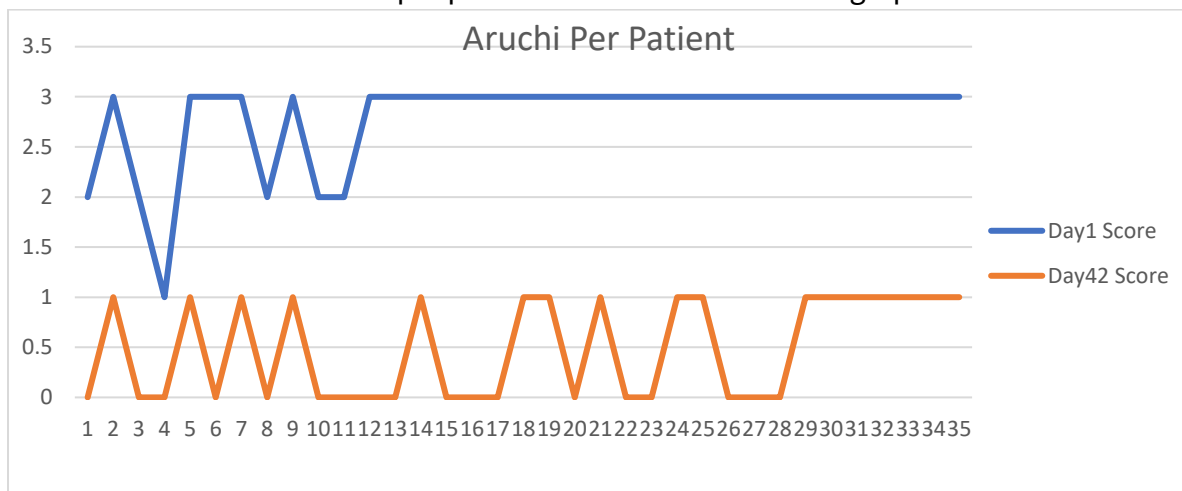


In this study, 21 patient (60%) out of 35 patients had pittavaataj prakruti, pitta and vaata get easily aggravated in these patients by Alcohol consumptions. 12 patient (34.3%)

had pittakaphaj prakruti. kapha pradhan prakruti was less involved(kaphaja –pittaja Only 1 patient (2.9%) patients were seen).

Graph 4 : Aruchi per patient

The Decrease in Aruchi score per patient is shown below in line graph.

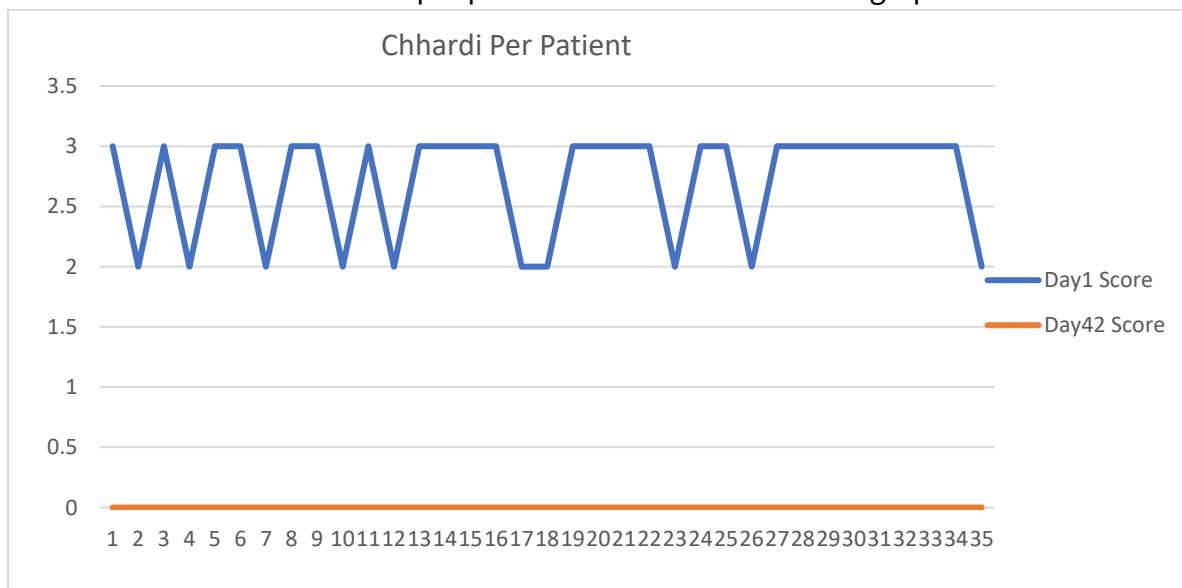


The line graph clearly shows that there is decrease in Aruchi score for each patient after the treatment. Before treatment all 35 patients had some grade of Aruchi. 1 patient had aruchi 1 grade (i.e., occasionally

present), 5 patients had frequently present Aruchi (i.e.2 grade), 29 patient had 3 grade Aruchi (i.e. continuously present), but after treatment 18 patient were not having Aruchi at all whereas 17 had only 1 grade Aruchi.

Graph 5 : Chhardi per patient

The Decrease in Chhardi score per patient is shown below in line graph.

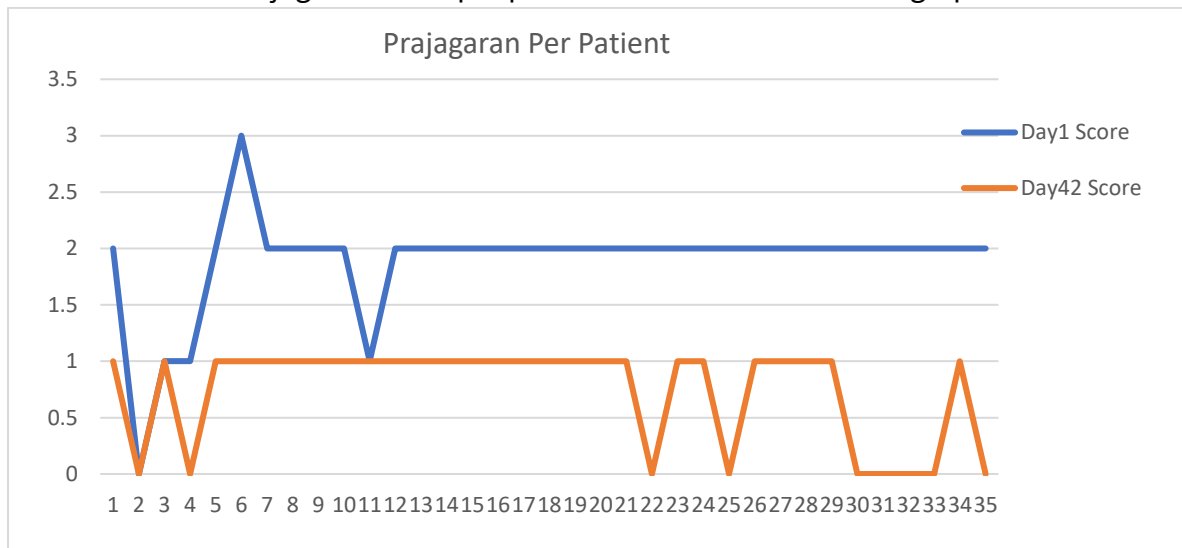


The line graph clearly shows that there is decrease in Chhardi score for each patient after the treatment. Before treatment

18 patients were not having chhardi and 17 were having 1 grade of chhardi

Graph 6 : Prajagaran per patient

The Decrease in Prajagaran score per patient is shown below in line graph.

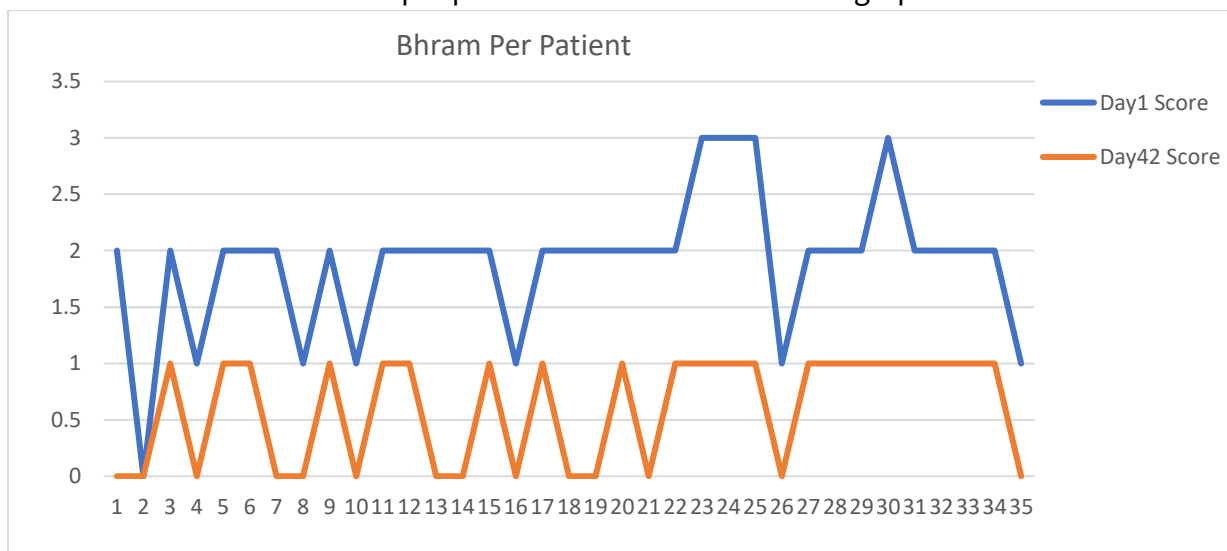


The line graph clearly shows that there is decrease in Prajagaran score for each patient after the treatment. Before treatment 1 patient was sleeping less than 3 hrs a day, 30 patients were having grade 2 prajagaran

(sleeping 4-6 hrs a day), 3 patients having grade 1 prajagaran and only 1 was not suffering through it. After treatment 26 patient had 1 grade prajagaran and 9 got complete relief.

Graph 7: Bham per patient

The Decrease in Bham score per patient is shown below in line graph.

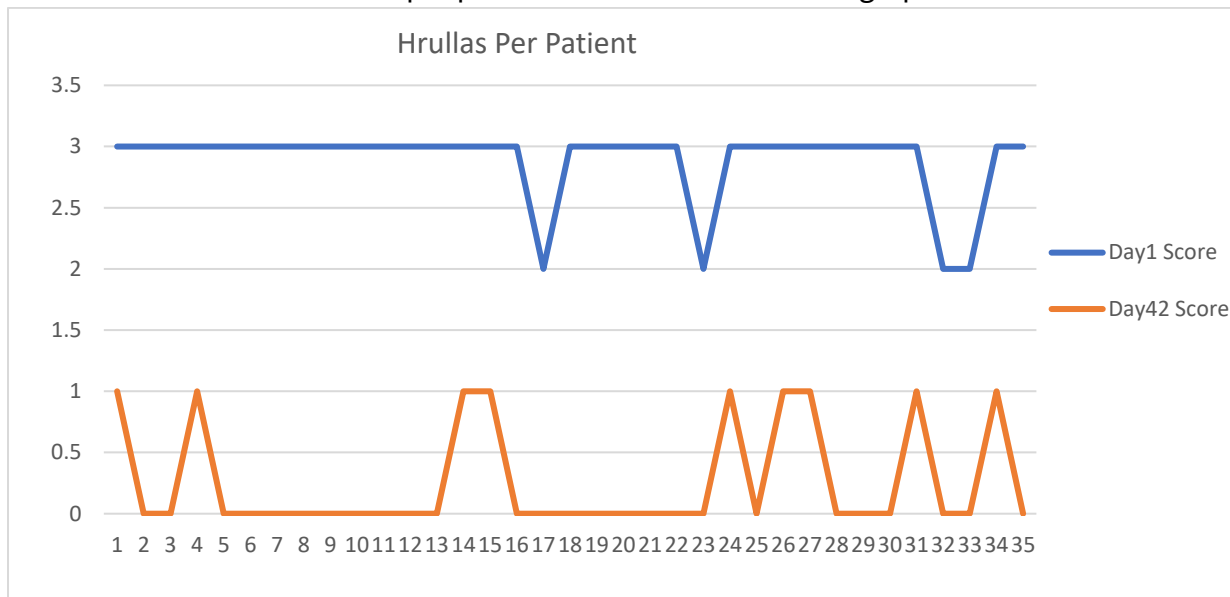


The line graph clearly shows that there is decrease in Bham score for each patient after the treatment. Before treatment 4 patients had 3 grade bham, 24 patients had 2 grade bham (i.e. positional vertigo with

vomiting, able to sit), 6 had 1 grade vertigo and only 1 had no vertigo. After treatment amongst 35 patients, 14 patients did not suffer from vertigo and 21 patients suffered 1 grade vertigo only.

Graph 8: Hrullas per patient

The Decrease in Hrullas score per patient is shown below in line graph.

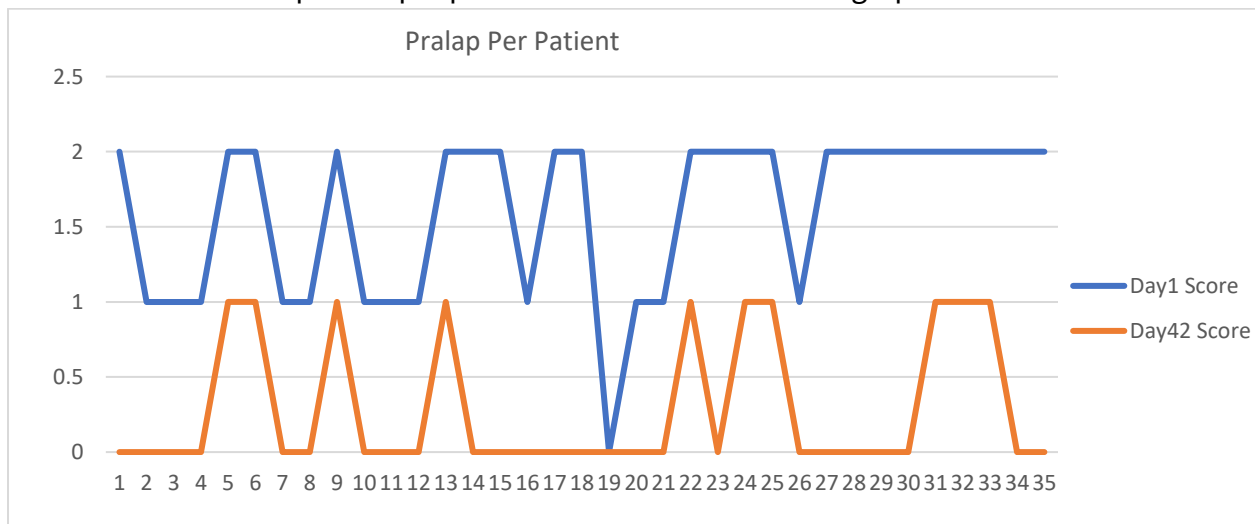


The line graph clearly shows that there is decrease in Hrullas score for each patient after the treatment. Before treatment amongst 35 patients, 31 patients had 3 grade

hrullas, and 4 had 2 grade hrullas. After treatment 9 patients had 1 grade hrullas and 26 got complete relief i.e. no hrullas at all.

Graph 9 : Pralap per patient

The Decrease in Pralap score per patient is shown below in line graph.

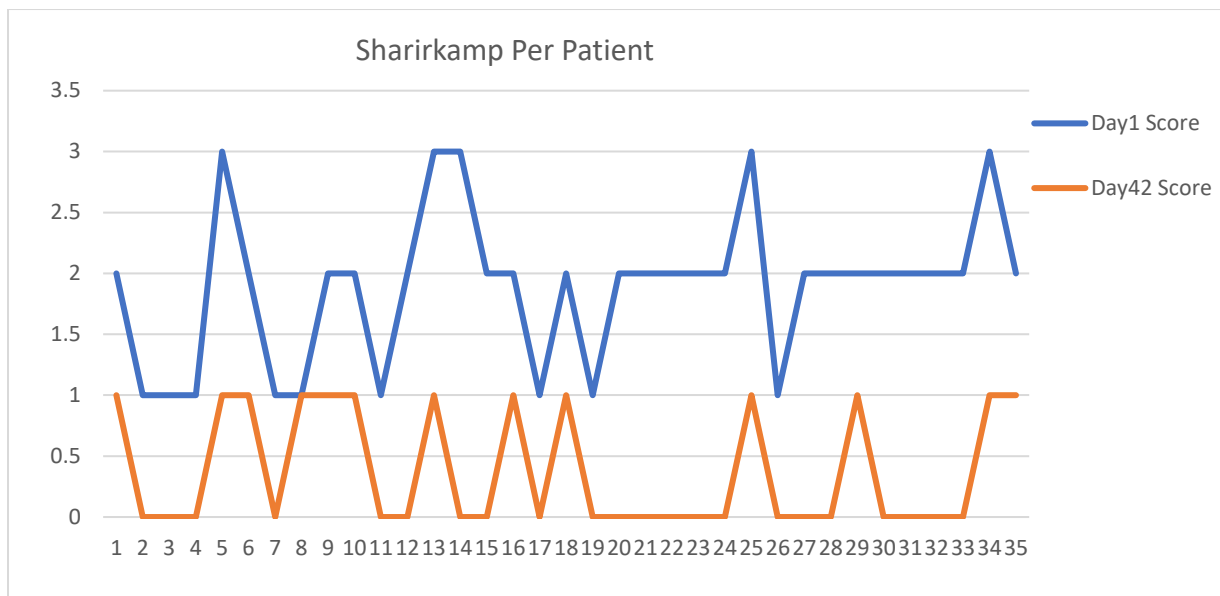


The line graph clearly shows that there is decrease in Pralap score for each patient after the treatment. Before treatment 22 patients had 2 grade pralap, 12 had 1 grade

pralap and 1 had no pralap at all. After treatment 10 had 1 grade pralap and 25 did not have pralap anymore.

Graph 10 : Sharirkamp per patient

The Decrease in Sharirkamp score per patient is shown below in line graph.



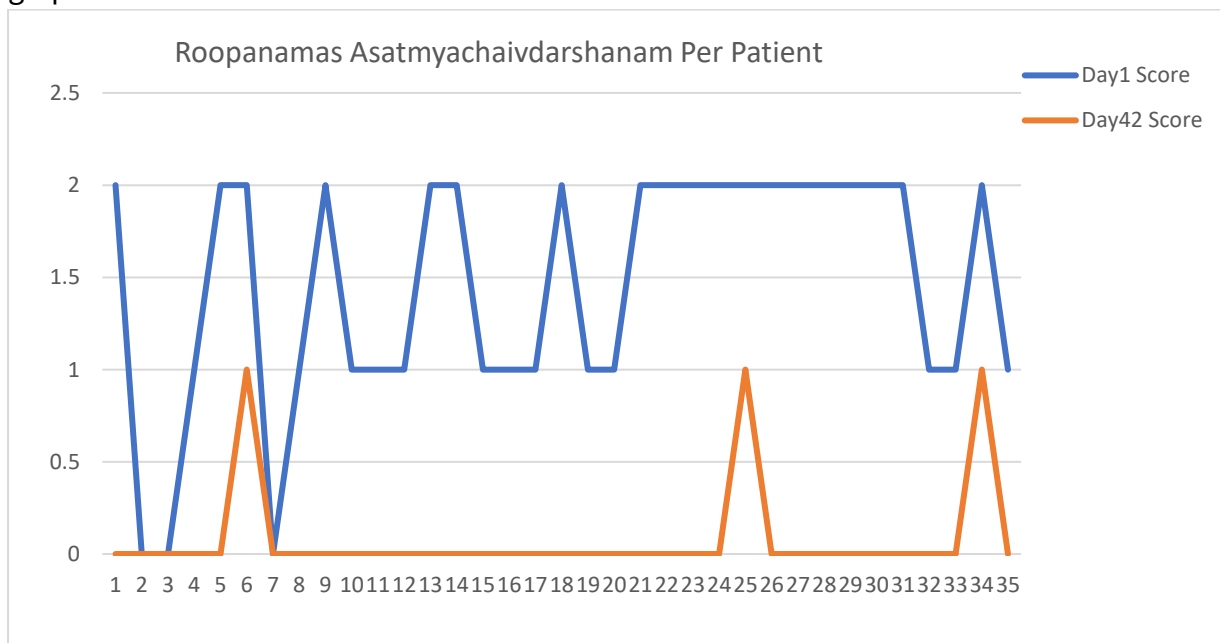
The line graph clearly shows that there is decrease in Sharirkamp score for each patient after the treatment. Before treatment amongst 35 patients 5 had 3 grade

sharirkamp, 21 had 2 grade sharirkamp and 9 had 1 grade sharirkamp.

After treatment 22 patients did not suffer from sharirkamp anymore whereas 13 patients had 1 grade sharirkamp.

Graph 11: Roopanamasatmyachaiv darshanam per patient

The Decrease in Roopanamas Atymachaivd arshanam score per patient is shown below in line graph.



The line graph clearly shows that there is decrease in Roopanam

asatymachaivdarshanam score for each patient after the treatment. Before treatment

3 patients had 0 grade Roopanam asatymachaivd arshanam, 13 patients had 1 grade and 19 patients had 2 grade Roopanam

asatymachaivd arshanam. After treatment 32 got complete relief while 3 patients had 1 grade of symptom to still persist.

Table 2 : Statistical Test:

To test whether there is significant difference in before treatment & after treatment readings on an average if factors Aruchi, Chhardi, Prajagaran, Bhram, Hrullas, Pralap, Sharirkamp, Roopanam asatmyachaivdarshanam are considered.

Test Statistics^b

	Aruchi After - Aruchi Before	Chhardi After - Chhardi Before	Prajagaran After - Prajagaran Before	Bhram After - - Bhram Before	Hrullas After - Hrullas Before	Pralap After - Pralap Before	Sharirkamp After - Sharirkamp Before	Roopanamas Atymachaivd arshanam After - Roopanamas Atymachaivd arshanam Before
Z	-5.347 ^a	-5.417 ^a	-5.216 ^a	-5.308 ^a	-5.355 ^a	-5.289 ^a	-5.231 ^a	-5.090 ^a
P value	.000	.000	.000	.000	.000	.000	.000	.000

a. Based on positive ranks.
b. Wilcoxon Signed Ranks Test

Since P value < 0.05, the level of significance for Aruchi, Chhardi, Prajagaran, Bhram, Hrullas, Pralap, Sharirkamp, Roopanamas atmyachaivdarshanam; there is strong evidence to reject the null hypothesis for each factor stated above.

Factors: Hb%, Wbc, Platelet, ESR, blood Creatinine, BSL, T.Bilirubin, D.Bil., I.Bil, SGOT, SGPT, Akl Po₄, T.Protein, Alb, Glb, Body Wt

Test2: To test whether there is significant difference in before treatment & after treatment readings on an average if factors HB%, WBC, Platelet, ESR, BUL, Creat, BSL, T.BILIRUBIN, D.BIL., I.BIL, SGOT, SGPT, AKL PO₄, T.PROTEIN, Alb, Glb, Body Wt are considered.

Table 3 : Paired T Test.

Paired Samples Statistics

Pair		Mean	N	Std. Deviation
1	Hb% Before	11.6114	35	1.3683
	Hb% After	11.7800	35	1.2753
2	WBC Before	11857.14	35	4252.8389
	WBC After	8931.4286	35	2005.2536
3	Platelet Before	2504.8954	35	13545.2972
	Platelet After	202.1583	35	1182.8405
4	ESR Before	33.9429	35	16.1354
	ESR After	26.5429	35	15.9767
5	BUL Before	31.0286	35	7.5828
	BUL After	25.5714	35	5.0601
6	Creat Before	1.3057	35	.2182
	Creat After	1.0771	35	.1784
7	BSL Before	117.6571	35	15.5770
	BSL After	118.2571	35	7.8865
8	T.BILIRUBIN Before	6.7971	35	2.4328
	T.BILIRUBIN After	2.3257	35	1.3441
9	D.BIL. Before	3.6457	35	1.4302
	D.BIL. After	1.3000	35	.8004

Table 4 : Paired T Test.

		Paired Differences				
		Mean	Std. Deviation	t	df	P value
Pair 1	Hb% Before - Hb% After	-.1686	.4831	-2.064	34	.047
Pair 2	WBC Before - WBC After	2925.7143	3300.0306	5.245	34	.000
Pair 3	Platelet Before - Platelet After	2302.7371	13519.6426	1.008	34	.321
Pair 4	ESR Before - ESR After	7.4000	8.5790	5.103	34	.000
Pair 5	BUL Before - BUL After	5.4571	4.8588	6.645	34	.000
Pair 6	Creat Before - Creat After	.2286	.1250	10.816	34	.000
Pair 7	BSL Before - BSL After	-.6000	12.6705	-.280	34	.781
Pair 8	T.BILIRUBIN Before - T.BILIRUBIN After	4.4714	1.7252	15.334	34	.000
Pair 9	D.BIL. Before - D.BIL. After	2.3457	1.0098	13.743	34	.000

Table 5 : Paired T Test.

		Paired Differences				
		Mean	Std. Deviation	t	df	P value
Pair 1	I.BIL Before - I.BIL After	2.1514	.9479	13.428	34	.000
Pair 2	SGOT Before - SGOT After	62.0571	47.9485	7.657	34	.000
Pair 3	SGPT Before - SGPT After	80.7514	78.1799	6.111	34	.000
Pair 4	AKL PO4 Before - AKL PO4 After	76.3257	42.9585	10.511	34	.000
Pair 5	T.PROTEIN Before - T.PROTEIN After	-.3600	.3406	-6.253	34	.000
Pair 6	ALB Before - ALB After	-.2886	.3740	-4.565	34	.000
Pair 7	GLB Before - GLB After	-.1514	.2501	-3.581	34	.001
Pair 8	BODY WT Before - BODY WT After	-.3771	.3370	-6.620	34	.000

Since P value < 0.05, the level of significance for HB%, WBC, ESR, BUL, Creat, T.Bilirubin, D.Bil., I.Bil, SGOT, SGPT, Akl Po4,

T.Protein, Alb, Glb, Body Wt; there is strong evidence to reject the null hypothesis for each factor stated above.

DISCUSSION:

In this study, 35 patients of Madatyaya were included data. All the patients were clinically examined on the basis of Ayurvedic aspects. The assessment was carried out before and after treatment to evaluate the total effect of treatment. Result was analyzed by using Wilcoxon rank test for subjective parameters and paired 't' test for objective parameters.

1) Aruchi :

The percentage relief in the Aruchi was 82 %, this was further put to statistical analysis by Wilcoxon Signed rank test, extremely significant result were obtained.

2) Chhardi (vomiting):-

Total 25 patient had got 3 grade relief; 10 patient had got 2 grade relief. The percentage relief was 100%, this was further put to statistically analysis by Wilcoxon Signed rank test, extremely significant result was obtained, thus the drug is very effective in vomiting.

3) Prajagara (insomnia)-

Total 8 patient had got 2 grade relief; 24 patient had got 1 grade relief and 3 patient have no relief. The percentage relief in the Prajagara (Insomnia) was 60.60% ,this was further put to statistical analysis by Wilcoxon Signed rank test, extremely significant result was obtained. Thus, the drug is more effective on Prajagara.

4) Bhrama (giddiness):-

In this study, 11 patients had got 2 grade relief, 23 patient had got 1 grade relief and 1 patient have no relief. The percentage relief in the bhrama was 68.18%, this was further put to statistical analysis by Wilcoxon Signed rank test, extremely significant result was obtained. Thus, the drug is more effective on bhrama.

5) Hrullas (nausea):-

In this study, 22 patients had got 3 grade relief, 13 patient had got 2 grade relief. The percentage relief in the Hrullas was 90.09% , this was further put to statistical analysis by Wilcoxon Signed rank test, extremely significant result were obtained. Thus the drug is more effective on Hrullas.

6) Pralap (Irrelevant talk):-

In this study, 12 patients had got 2 grade relief, 22 patient had got 1 grade relief, 1 patient have no relief. The percentage relief in the Pralap (Irrelevant talk) was 82.14%, this was further put to statistical analysis by Wilcoxon Signed rank test, extremely significant results were obtained. Thus, the drug is more effective on pralapa.

7) Kampa (Tremors):-

In this study, 1 patient had got 3 grade relief, 17 patient had got 2 grade relief, 16 patient had got 1 grade relief, 1 patient have no relief. The percentage relief in the Kampa (Tremors) was 80.30%, this was further put to statistical analysis by Wilcoxon Signed rank test, extremely significant results were obtained. Thus the drug is more effective on kampa (tremors).

8) Roopanam asatmyachaidarshanam- (visual hallucination):-

In this study, 16 patients had got 2 grade relief, 16 patient had got 1 grade relief, 3 patient have no relief. The percentage relief in the RACP was 94.11%, this was further put to statistical analysis by Wilcoxon Signed rank test, extremely significant results were obtained. Thus, the drug is more effective on Roopanam asatmyachaidarshanam.

Effects on Biochemical markers:**Effect on Total Serum Bilirubin Level:-**

Among 35 patients selected averages S.billirubin Score before treatment was

6.7971 which was decreased up to 2.3257 after a treatment. So 65.78% relief seen in total bilirubin level, suggesting that Mathit yog is extremely significant in decreasing in S bilirubin.

Effect On SGOT:-

Among 35 patients selected average SGOT Score before treatment was 115.4571 which was decreased up to 53.4000. So 53.74% relief seen in SGOT level after the treatment, suggesting that Mathit yog is extremely significant in decreasing in SGOT level.

Effect On SGPT LEVEL:-

Among 35 patients selected average SGPT Score before treatment was 130.7229 which was decreased up to 49.9714. So 61.77% relief seen in SGPT level after a treatment, suggesting that Mathit yog is extremely significant in decreasing SGPT level.

Effect on alkaline phosphatase:-

Among selected 35 patients average alkaline phosphatase score before treatment was 203.3543 which was decreased to 127.0286. So 37.53% relief seen in alkaline phosphatase level after a treatment, suggests that *Mathit yog* is extremely significant in decreasing alkaline phosphatase level.

Effect on Hb:-

In the selected patient average Hb% score before treatment was 11.6114 which increased to 11.78 After treatment. So 1.45% gain in Hb% suggests that *Mathit yog* is very significant in increasing Hb% level.

Effect on WBC:-

In the selected patients average score before treatment was 11857.14 which decreased to 8931.4286 After treatment, so 24.67% decrease in total WBC count suggests

that *Mathit yog* is significant in decreasing WBC count.

Effect On other Haematological Values:-

Other investigations were done before treatment and after completion of treatments, It is observed that *Mathit Yog* has Not very significant role over other investigations, like sr.protein. sr albumin sr.globulin, platelet, BSL. No increase in Renal function test shows that the drug has no any renal toxic effect.

Action of Mathit Yog in Madatyaya -

The action of *Mathit Yog* in *Madatyaya* is seen due to its *rasa, guna, veerya* and *prabhava*.⁹Til tail acts as *rasayan* and relieves *agnimandya*. *Karpoor* has *shit* property, it acts as *dah, trushna, aruchi nashak*. *Dadhi* has *rochan, deepan, sar* properties, with these properties *Mathit yog* purifies the channels & tissue pores functions are achieved and ultimately improving the status of *agni*¹⁰ The ingredients *Til tail, godadhi, karpoor* are having *madhur, snigdha* properties which are advised in the treatment of these symptoms *Aruchi, Hrullas, Cchardi, Prajagar, Bhram, Kamp*¹¹. *Mathit yog* helps to maintain the status of gastrointestinal disorders, *agni i.e. Jatharagni and dhatvagni*. It is seen that none of the patient was found to have complete remission. *Mathit yog* has provided better relief in most of the symptoms except *prajagar* and *bhram*. Then it clearly indicates that *Mathit yog* has significant role in Alcohol withdrawal (*Madatyaya*).

CONCLUSION:

Mathit yog has provided better relief in most of the symptoms except *Prajagar* and *bhram*. There was significant difference in before treatment & after treatment readings on an average if factors HB%, WBC, ESR, BUL, Creat, T.bilirubin, D.bil., I.bil, SGOT, SGPT,

AKL PO4, T.Protein, ALB, GLB, Body wt. are considered. here was no significant difference in before treatment & after treatment readings on an average if factor Platelet, BSL is considered. No unwanted effects of the drug were noticed after administration of drug for a period of 6 weeks. All ingredients are easily available, safe, cost effective and it is well tolerated by the patients. Study shows that *Mathit Yog* is beneficial for the *Madatyaya* patients.

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