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Effect of an Ayurvedic Treatment Regimen on *Madyajanit Jalodara*: A Case Report on Alcohol-Induced Ascites

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Abstract: ***Background: Alcohol-induced ascites, or Madyajanit Jalodara, is a frequent side effect of long-term alcohol abuse that frequently results in serious morbidity. While conventional therapies concentrate on symptom management, but there is growing interest in alternative therapies such as Ayurveda. The impact of an Ayurvedic treatment plan on a patient with alcohol-induced ascites is examined in this case study. Case presentation: A 43-year-old man with a history of long-term alcohol use showed signs of heaviness in abdomen, coughing with sputum, loss of appetite, tremors, hiccups since last 15 days. Imaging and a clinical examination supported the diagnosis of alcohol-induced ascites. Clinical signs and diagnostic imaging, such as ultrasonography, which verified the existence of ascites brought on by long-term alcohol consumption, were used to make the diagnosis. Intervention: The patient was initiated on an Ayurvedic regimen containing of a combination of herbal preparations. Specific herbs – Makoya Arka, Markandeyadi Hima, Arogyavaradhini Vati, Gokshuradi Churna etc. were used for their hepatoprotective and diuretic properties. Outcome: Following four weeks of therapy, the patient's energy levels increased, got significant relief in previous complaints and there was a noticeable decrease in abdominal distension. The patient's quality of life improved, and the volume of ascitic fluid reduced. Conclusion: This case highlights the potential role of Ayurveda in managing Madyajanit Jalodara. The Ayurvedic treatment regimen seemed to provide substantial symptomatic relief and improvement in liver function.***

Keywords: *Madyajanit Jalodara*, ascites, *Makoya Arka*, *Markandeya Hima*

1. Introduction

Madyajanit Jalodara, also known as, Alcohol-induced ascites is a severe form of chronic liver disease (CLD) marked by an excessive buildup of fluid in the peritoneal cavity as a result of renal failure, portal hypertension, and hypoalbuminemia. Ascites is a gastroenterological term for an accumulation of fluid in the peritoneal cavity that exceeds 25 ml. [1]

A major risk factor for liver cirrhosis is long-term alcohol use, which can cause metabolic abnormalities, fibrosis, and progressive hepatocellular damage. According to research by O'Shea et al., [2] hospitalization rates for alcohol-induced cirrhosis and ascites have increased by 30% during the last 20 years, indicating that these conditions are becoming more common. Furthermore, cirrhotic individuals have a 20–30% death rate within a year of the onset of ascites, highlighting the necessity of efficient treatment measures. [3] Ascites is one of the most serious side effects of alcohol-induced liver disease (ALD), which is currently divided into three categories: cirrhosis, alcoholic hepatitis, and steatosis. Around 50% of all liver-related fatalities globally are caused by alcohol-related liver cirrhosis, [4] indicating the significant global burden of ALD. A considerable percentage of CLD cases in India are caused by alcohol-related liver disease, which is on the rise as a result of increased alcohol use. [5] Diuretics, paracentesis, and albumin treatment are the mainstays of conventional care for ascites in CLD; however, these methods frequently just relieve symptoms and sometimes have serious adverse consequences.

Ascites is the contemporary word for *Jalodara Roga*, which has been extensively studied by the *Acharya* of Ayurveda. Fluid builds up between the *Saptatvacha* (seven layers of skin) and *Mamsa* (muscular) in *Udara Pradesha*. [6] *Mandagni* is a key factor in the disease's expression. *Atiushna-Amla Rasa Sevana* (overindulgence in hot and sour foods), *Malinnabhojana* (contaminated diet), and *Mala Sanchaya* (accumulation of waste materials) are the three main *Nidana*. [7] In *Jalodara*, *Vata* located in *Kloma* (a viscera located adjacent to the heart, i.e. right lungs) gets interrupted with *Kapha* and *Udaka Dhatu* that increases the quantity of that water in the obstructed channels of circulation. The vitiated *Kapha* and *Vata* from their own sites assist in increasing this water as a result of *Jalodara* (ascites) is caused. [8] The vitiated *Kapha* and *Vata* cause morbid thirst as a result of which the patient takes large quantity of water. This water gets accumulated in the abdomen causing ascites thereby. Since *Virechana* is the fundamental management approach for *Madyajanit Jalodara*, the illness can be treated by giving some purgatives to the patient.

Acharya Charak mentioned the key principle for the management of *Jalodara* is – A). *Nidana Parivarjana* (Avoidance of etiological factors) B). *Nitya-Virechana* (Patient of *Jalodara* should be given purgation therapy

everyday) C). *Apamdoshaharanyadaupraddhyatudakodare* - At first the patient of *Jalodara* should be administered therapies which remove the defects of the liquid elements. For this purpose, patient should be given drugs having *Teekshna* properties mixed with *Gomutra*. Patient should be given *Deepaniya* (digestive stimulant) and *Kaphaghnaahara*. Gradually, the patient should be prohibited to take water and such other liquids. [9]

2. Case History

Patient Information

A 43-year-old male was brought in with abdominal heaviness, coughing with sputum, loss of appetite, tremors, and hiccups for the past 15 days. The patient was apparently normal until 15 years ago when he started consuming alcohol (one quarter per day). Five years ago, the quantity and frequency of alcohol intake increased to 720 ml per day. In 2020, he was diagnosed with alcoholic liver disease with portal hypertension and ascites and underwent an abdominal tapping procedure. However, he did not stop consuming alcohol. In December 2024, he developed ascites again. Despite his condition, he continued consuming approximately 700 ml of alcohol daily, which led to the progression of alcoholic liver disease with splenomegaly and ascites.

Personal history –

- Diet- non-vegetarian, intake of fast foods during taking alcohol
- Frequency of Food – Irregular
- Appetite - Decreased
- Sleep – Disturbed
- Bowel – Regular
- Bladder – Increased frequency of urination

Past medical history –

- History of CLD (Chronic Liver Disease), Ascites and Splenomegaly.

Past surgical history –

- Hemorrhoidectomy was done in 2022.

Addiction history -

- He has been consuming alcohol and tobacco for a long time.

Clinical Findings -

1) Physical Examination

a) General examination -

- Blood pressure - 140/80 mmHg
- Pulse rate - 80/min
- Respiratory rate - 18/min
- Temperature - Afebrile
- Icterus - Present
- Pallor - Present
- Edema - Pitting edema of bilateral lower limbs
- Face - Puffy Face

b) Systemic examination -

- RS - B/L symmetrical chest, AEBE – Clear,
- CVS - S1, S2 normally audible, no any added sound
- P/A - Distended abdomen with a fluid thrill/shifting dullness
- CNS - Conscious, well oriented with time, place & person
- Muscular system - No any muscle Atrophy or hypertrophy was found; muscle power was good.

2) Ashtavidha Pariksha

a) ***Nadi****: Vata - Pitta*

b) ***Mutra****:*

- *Matra – Bahula*
- *Gandha – Samanya*
- *Varna – Peeta*
- *Pravritti – Samanya*

c) *Mala:*

- *Matra – Samanya*
- *Varna – Samanya*
- *Gandha – Alpa*
- *Pravritti – Regular*
- ***Jihwa****: Nirama*
- ***Shabda****: Spashta*
- ***Sparsh****: Samanya*
- ***Netra****: Samanya*
- ***Akriti****: Samanya*

Laboratory investigations findings -

Table 1: Showing findings of laboratory investigations

Name of investigation	Before Treatment	After Treatment	Unit
Complete Blood Count (CBC)			
Total Red Blood Cell	2.217	3.42	*10^6/µl
Hemoglobin	6.7	9.4	g/dL
Hematocrit	20.7	30.5	%
MCV	95.4	89.2	fL
MCH	30.9	27.5	pg
MCHC	32.4	30.8	g/dL
RDW-CV	22.6	19.3	%
RDW-SD	79.8	63.8	%
WBC	21.33	4.53	*10^3/µl
PLT	120	120	*10^9/L
Erythrocyte Sedimentation Rate (ESR)			
ESR	73	63	MM/HR
Liver Function Test (LFT)			
BILIRUBIN TOTAL	4.290	2.221	mg/dL
BILIRUBIN DIRECT	3.286	1.819	mg/dL
BILIRUBIN INDIRECT	1.00	0.40	mg/dL
SGOT(AST)	81.1	47.1	U/L
SGPT(ALT)	22.6	11.9	U/L
TOTAL PROTEIN	7.80	7.63	g/dL
ALBUMIN	2.12	2.63	g/dL
GLOBULIN	5.08	5.00	g/dL
A/G RATIO	0.37	0.53	-
ALKALINE PHOSPHATE	266	173	U/L
GGT	35	25	U/L
Renal Function Test (RFT)			
UREA	52.5	16.2	mg/dL
S. CREATININE	3.43	0.85	mg/dL

Radiological investigation -

Table 2: Showing findings of radiological investigations

USG findings	
Before treatment	After treatment
• CLD with Portal hypertension • Moderate ascites • Moderate splenomegaly	• Grade 1 Fatty liver changes • Coarse echotexture of liver • Mild splenomegaly

Interventions

Posology

Table 3: Showing list of interventions (medicines)

S. No.	Name of Medicine	Dose	Time of administration	Route of Administration	Anupana	Duration (in days)
1.	*Shreekhandasva*	50ml	After meal at morning & evening	Oral	Equal amount of water	45 days
2.	*Gomutra*	15ml	Empty stomach at morning	Oral	-	45 days
3.	*Arka Makoya*	20ml	After meal at morning & evening	Oral	Lukewarm water	45 days
4.	*Arogyavardhini Vati*	2tab	After meal at morning & evening	Oral	Lukewarm water	45 days
5.	M. Liv syrup	10ml	Before meal at morning & evening	Oral	Water	45 days
6.	*Avipattikara Churna*	3gm	Before meal at morning & evening	Oral	Water	15 days
	Pittantaka Yoga	500mg				
	Muktashukti Bhasma	500mg				
7.	*Gokshuradi Churna*	3gm	After meal at morning & evening	Oral	Water	45 days
	Sweta Parpati	500mg				
8.	*Eranda Bhrista Haritaki Churna*	4gm	After meal at bedtime	Oral	Lukewarm water	15 days
9.	*Markendyadi Hima*	40ml	Before meal at morning & evening	Oral	Water	45 days
10.	*Mahanarayana Taila*	-	-	Local Application	-	45 days

3. Discussion

Since the Ayurvedic *Acharya* did not outline a distinct *Samprapti* (pathogenesis) for *Madyajanit Jalodara*, we might infer from the *Niadana* of *Udara Roga* that long-term *Madya* usage can likewise result in *Udara Roga* (*Jalodara*). Chronic alcohol use causes cirrhosis, fibrosis, and hepatocellular damage, all of which impair fluid balance and liver metabolism. Fluid retention and ascitic buildup are exacerbated by the ensuing portal hypertension and hypoalbuminemia. According to Ayurvedic principles, this disease is associated with *Kapha-Pitta* vitiation, which results in *Agni-Mandya* (digestion impairment) and *Srotorodha* (microchannels obstruction), which in turn causes the accumulation of ascitic fluid. [10] According to *Acharya Charak*, all *Udara Roga* are brought on by an imbalance of the three *Dosha*, and the first line of treatment for *Jalodara* should concentrate on getting rid of the problems brought on by the body's excessive water retention. *Gomutra* (cow's urine) along with other *Teekshna* medications should be utilized for this.

Based on *Shreekhandasva* primary components, which include herbs with established hepatoprotective properties like *Chandan* (*Santalum album*) and *Bilwa* (*Aegle marmelos)*, the mechanism of action of *Shreekhandasava* may be hypothesized. According to studies, these herbs have antioxidant properties that help lessen the liver damage brought on by oxidative stress. [11] Furthermore, its possible diuretic action could help maintain fluid balance, lessen the buildup of ascitic fluid, and lessen reliance on conventional diuretics. [12] *Gomutra* is a powerful detoxifier and bio-enhancer that has also been shown to have hepatoprotective and diuretic effects. By improving liver detoxification and supporting renal function, it aids in the reduction of ascitic fluid buildup. [13] *Arogyavardhini Vati* is a traditional Ayurvedic remedy that is frequently used to treat liver conditions, such as alcohol-induced ascites and chronic liver disease (CLD). It contains hepatoprotective, anti-inflammatory, and detoxifying substances such as *Kutki* (*Picrorhiza kurroa*), *Haritaki* (*Terminalia chebula*), and *Tamra Bhasma*. [14] Through the modulation of hepatic enzymes and the reduction of oxidative stress, studies have shown that it is effective in improving liver function tests (LFTs). [15] The well-known hepatoprotective herb *Makoy* (*Solanum nigrum*) aids in liver cleansing and regeneration. Research has demonstrated its effectiveness in lowering oxidative stress and hepatic fibrosis. [16] Its antioxidant properties are essential for reducing liver damage brought on by alcohol.

An ayurvedic polyherbal syrup called M-Liv is used to treat hepatobiliary conditions. It comprises *Kutki*, *Kalmegh* (*Andrographis paniculata*), and *Bhumyamalaki* (*Phyllanthus niruri*), all of which have potent hepatoprotective properties. According to clinical research, it increases bile flow in hepatic diseases, lowers high liver enzymes, and improves liver functioning. [17]. Another formulation for liver malfunction and hyperacidity is *Avipattikar Churna*. It prevents liver congestion by preserving metabolic and digestive equilibrium. *Mukta Shukti Bhasma* and *Pittantak Yoga* help to lower inflammatory mediators and neutralize the liver's acid load. Research backs up their ability to enhance digestion and lessen oxidative stress in liver disorders. [18] The diuretic, nephroprotective, and anti-inflammatory properties of *Gokshura* (*Tribulus terrestris*) aid in the reduction of ascitic fluid buildup. It promotes renal clearance and avoids

electrolyte imbalance when taken with *Shweta Parpati*. According to research, this combination can help manage fluid retention and cirrhotic ascites. [19]

A cold infusion formulation called *Markandeyadi Hima* is well-known for its hepatoprotective and diuretic qualities. In chronic liver diseases, it helps restore liver function and lessen the buildup of ascitic fluid. According to clinical research, it may help balance the *Pitta* and *Kapha Dosha*, which are primarily responsible for liver damage brought on by alcohol. [20] Vitamin C and antioxidants, which are abundant in *Amalaki* (*Indian gooseberry*), are essential for liver cleansing and regeneration. It has been demonstrated to lessen inflammation and hepatic fibrosis in cases of alcohol-induced liver injury. It has been shown to be effective in lowering liver enzymes and serum bilirubin, which enhances liver health in general. [21]

Therefore, hepatoprotection, diuresis, anti-inflammatory activity, and metabolic control are the main ways that the ayurvedic medications mentioned above function. The outcome was determined to be clinically meaningful in terms of both liver size and abdominal fluid reduction. By using the traditional treatment concept of administering *Virechana* in *Jalodara Roga*, it highlights the significance of the aforementioned treatment protocol in *Madyajanit Jalodara*.

4. Conclusion

Excessive alcohol consumption, which lowers the level of *Jatharagni* and causes the accumulation of extra fluid in the peritoneal cavity, was the cause of the *Jalodara*. The primary treatments of *Madyajanit Jalodara* are *Nidana Parivarjana*, *Nitya-Virechana*, and *Shaman Chikitsa* (Palliative Therapy) aid in the elimination of accumulated *Dosha* from the body and support *Strotasa Shodhana*, which ultimately results in *Jalodara Samprapti Vighatana*. Abdominal girth, appetite, tremors and physical strength were significantly improved in this case study with the use of the ayurvedic medications mentioned above. Additionally, laboratory investigations have significantly improved. All medications are safe to use and helpful in treating *Madyajanit Jalodara* (alcohol-induced ascites) because they don't cause any negative effects during the course of treatment.

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