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Udaraprashamanartha Amalakyadi Kwatha in Alcoholic Liver Disease

Research Article

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Abstract

Alcoholic liver disease is a term that encompasses the hepatic manifestations of alcohol overconsumption, including fatty liver, alcoholic hepatitis, and chronic hepatitis with hepatic fibrosis or cirrhosis. Alcoholic liver disease (ALD) is the most prevalent cause of advanced liver disease. However, there has been limited research investment into ALD despite its significant burden on the health. Many patients of ALD having the clinical manifestations viz.ascites, hepatitis etc. used to visit the OPD of Dr. M.N. Agashe hospital, Satara.Hence, being an Ayurvedic hospital it was decided to work upon ALD with some Ayurvedic medicines. For that total 30 patients of ALD were selected and treated with '*AmalakyadiKwatha*' (containing *Amalaki, Haritaki* and *Guduchi* and *Katuki* in equal proportion). The formulation was given in the dose of 20 ml twice a day for the duration of one month. All the necessary parameters along with required investigations were assessed. In the results, weight of the patients was reduced by 12.13%. The parameters like abdominal girth (7.13 %↓), distance between umbilicus and xiphisternum (17.34 %↓), distance between umbilicus and pubis (19.18 %↓), distance between umbilicus and right anterior superior iliac crest (19.55 %↓), distance between umbilicus and left anterior superior iliac crest (16.83 %↓) showed highly significant results. The biochemical parameters such as Bilirubin, SGPT and SGOT also showed significant reduction in their levels. Hence, it can be said that *Aamlakyadi kwath* can be a good option for disease like ALD instead of repeated abdominal paracentesis.

Key words: ALD, *Amalaki, Haritaki, Guduchi, Katuki, Sannipatodara*

Introduction:

Alcoholic liver disease (ALD) is the most prevalent cause of advanced liver disease. However, there has been limited research investment into ALD despite its significant burden on the health. ALD is a complex disease, the successful management of which hinges on the integration of all the competences in public health, epidemiology, addiction behavior and alcohol-induced organ injury. Both primary intervention to reduce alcohol abuse and secondary intervention to prevent alcohol-associated morbidity and mortality rely on the coordinated action of multidisciplinary teams established at local, national, and international levels.

ALD is not directly mentioned in Ayurveda but the disease can be compared with *Sannipataj Udara.* The symptoms of the disease are swelling of the abdomen, hands, legs, discoloration of nails, eyes,

face, skin, urine and stool, appearance of networks of veins on abdomen etc.(1) which are very much similar to alcoholic liver disease. Another fact is that the cause mentioned for *Sannipataj Udara* is *'Manda Visha'* (slow poison) which can be considered as alcohol.(2) Hence by seeing the causes as well as the symptoms the disease ALD could be taken as '*Sannipataj Udara'* according to Ayurveda.

Many patients of ALD having the clinical manifestations viz.ascites, hepatitis etc. used to visit the OPD of Dr. M.N. Agashe hospital, Satara.Hence, being an Ayurvedic hospital it was decided to work upon ALD with some Ayurvedic medicines. For this, four drugs viz. *Amalaki, haritaki, Guduchi* and *Kutaki* were selected and the formulation was named as *Amalakyadi Kwatha*. The rationale of selection of these drugs is mentioned later in this article. Hence with the aim to evaluate the efficacy of *Amalakyadi Kwath* on alcoholic liver disease the present study has been taken under.

Materials and methodology:

Total 30 patients suffering from alcoholic liver disease between the age group of 25 – 60 years were selected from the OPD and IPD of Dr. M. N. Agashe hospital, Satara irrespective of their sex and religion.

Inclusion Criteria:

1. Patients of Liver parenchymal disease including fatty changes and cirrhosis with ascites without any bar of caste, sex and religion.
2. Patients having excessive alcohol consumption
3. Patients having age between 25 to 60 yrs.

Exclusion Criteria:

1. Patients having age less than 25yrs and more than 60yrs
2. Patients having severe cardiac, renal disease, altered consciousness, malignancy, AIDS, neurological disorders etc.
3. Pregnant and lactating women
4. Non-alcoholic liver disease

Drug:

All the patients were provided with '*Amalakyadi Kwatha'*. The ingredients of the formulation and their quantity is mentioned in the below table

Sr. no.	**Drug**	**Latin name**	**Part used**	**Quantity**
1	*Amalaki*	*Embelica officinalis*	Fruit	1 part
2	*Haritaki*	*Terminalia chebula*	Fruit	1 part
3	*Guduchi*	*Tinospora cordifolia*	Stem	1 part
4	*Katuka*	*Piccrorhiza kurroa*	Root	1 part

Dose and duration:

The formulation '*Amalakyadi Kwatha'* was given P.O.(per oral) in the dose of 20 ml twice a day (morning and evening) for the duration of one month.

Assessment criteria:

Sign and symptoms of all the patients were observed before and after the treatment. Weight of all the patients was also recorded. Along with this the various parameters like abdominal girth, distance between umbilicus to xiphisternum, umbilicus to pubis, umbilicus to right and left anterior superior iliac crest was measured before and after the treatment.

Investigations:

In the investigations SGPT and SGOT values of all the patients were studied.

Statistical analysis:

Statistical analysis was done by applying students paired t test and

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percentage of improvement was calculated by the formula as

$$\frac{(\text{Total B.T.} - \text{Total A.T})}{\text{Total B. T.}} \times 100$$

Observations and results:

Weight of the patients was reduced by 12.13% which was statistically highly significant. Abdominal girth in sitting position was reduced by 7.12% whereas in supine position it was reduced by 7.13%. Both these parameters showed highly significant results. Among the various distances measured, distance between umbilicus and xiphisternum was reduced by 15.60% and 17.34% in sitting and supine position respectively. Likewise, the distance between umbilicus and pubis by 19.13% and 19.18%, distance between umbilicus and right anterior superior iliac crest by 23.73% and 19.55% while the distance between umbilicus and left anterior superior iliac crest by 15.83% and 16.83% in sitting and supine position respectively. All the parameters showed statistically highly significant results.

SGPT and SGOT were decreased by 83.30% and 82.64% respectively which showed highly significant results.

Discussion:

The mainstay of treatment for hepatic encephalopathy is to use lactulose, a non-absorbable disaccharide, which results in colonic acidification. The goal of lactulose therapy is to promote 2-3 soft stools per day.(3)

According to Harrison, patients of small amounts of ascites can usually be managed with dietary sodium restriction alone. When a moderate amount of ascites is present, diuretic therapy is usually necessary. If ascites is still present with high doses of diuretics in patients who are compliant with a low sodium diet, then they are defined as having refractory ascites, and alternative treatment modalities including repeated large volume paracentesis, or a TIPS procedure should be considered. Recent studies have shown that, TIPS while managing he ascites, does not improve survival of patients. Unfortunately, TIPS is often associated with an increased frequency of hepatic encephalopathy. The prognosis for patients of cirrhosis with ascites is poor and some studies have shown that <50% of patients survive 2 years after the onset of ascites. So, there should be consideration for liver transplantation in patients with the onset of ascites.(4) Thus, to avoid repeated paracentesis and also transplantation, it was planned to use the Ayurvedic medicine for such disease; also it was observed that by taking *'Amalakyadi Kwatha'* for this disease, patients are surviving for 5-10 years or more. Among the ingredients of the formulation *Amalakyadi Kwatha, Amalaki* is told as *agnideepaka, Tridoshahara* and *Kledashoshaka.*(5) It is also used for *Virechana*. *Haritaki* is *virechaka* and it is directly indicated in the diseases like *Kamala* (jaundice) and *Udara* (ascites).(6) *Guduchi* is indicated in the diseases of *Yakrit* and *Pleeha.*(7) Beside these actions mentioned above all these drugs are *Rasayana* and hence they were selected for the treatment in ALD. Regarding *Katuka* it is mentioned that it eliminates the waste from the gut without getting absorbed.(8)

Most of the patients gained weight which is supportive of the data that people with liver disease caused by alcohol abuse may also gain weight or appear swollen.(9) This develops because the body is retaining fluid. Pedal Oedema was also observed in almost all the patients which was pitting in nature. The edema is a consequence of the hypoalbuminemia and the kidneys retaining salt and water.(10) In patients with chronic diseases of the liver, fibrosis (scarring) of the liver often occurs. When the scarring becomes advanced, the condition is called cirrhosis of the liver. Ascites is excessive fluid that accumulates in the abdominal (peritoneal) cavity. It is a

complication of cirrhosis and appears as an abdominal bulge.

In the present study the mean values of SGPT and SGOT were 259.93 and 296.10 respectively indicating the severe liver damage.

During the period of whole study no any adverse drug reactions noted.

Probable mode of action:

Amalaki:

Ascorbic acid present in *Amalaki* prevents hepato toxicity. The fruits are reported to activate trypsin activity and found to be effective in acute viral hepatitis.(11)

Haritaki:

The fruits showed hepato protective activity against CCl4 and paracetamol liver injury in rats.

The dried flesh surrounding the seed is rich in tannins that showed antioxidant and protective effect on liver damage. Oral administration of tannin isolated from T. chebula antagonized the increase in SGPT, induced by aminopyrin and NaNO3 in mice. (12)

Guduchi:

The plant extract is used as immunomodulator in immune suppression of obstructive jaundice and hepatic fibrosis. It was found effective in preventing fibrous changes in liver and promoting regeneration of liver in CCl4 induced hepato toxicity. A decoction of *Guduchi* initially aggravates acute damage to the liver but then is able to prevent fibrotic changes and enhance liver tissue regeneration. (13)

Treatment with *Guduchi* reduced levels of bilirubin and alkaline phosphatase. The palnt extract showed in vitro inactivating activity in hepatitis B surface antigen in 48-72 hrs.(14)

Katuka:

P. kurroa is mainly used as a cure for liver diseases. The drug exhibited definite action in the process of clearance of hepatitis much faster than its placebo control.

It is also reported to exhibit potent immuno modulatory activity and is considered as immunomodulatory agent. Kutkin, a mixture of iridoid glycosides isolated from this plant has been reported to show hepato protective properties in CCl4 induced toxic rats. (15)

Picroliv, a standardized fraction from the alcoholic extract of root and rhizome of this plant showed significant protection against hepatic damage and found to be more potent than silymarin, a known hepatoprotective agent. (16)

Conclusion:

The disease ALD can be compared with *Sannipataj Udara* according to Ayurveda on the basis of similarity between causes and symptoms.

The formulation *Amalakyadi Kwatha* was found an excellent remedy for the alcoholic liver disease. It showed significant results on weight gain, pedal edema and abdominal enlargement. The formulation also significantly reduced the levels of SGPT and SGOT.

Table 1: Effect of *Amalakyadi kwatha* on weight of the patients of ALD

Parameter	**Mean score**		**Mean diff.**	**% change**	**SD**	**SEM**	**t**	**P**
(n=30)	**BT**	**AT**						
Weight	63.20	55.53	7.66	12.13↓	7.66	0.99	7.68	P<0.001

n: number of patients; BT: before treatment; AT: after treatment; ↓: decrease;
SD: standard deviation; SEM: standard error; P<0.001: highly significant

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Table 2: Effect of *Amalakyadi Kwatha* on various parameters of ALD in sitting position

Parameter	**Mean score**		**Mean diff.**	**% change**	**SD**	**SEM**	**t**	**P**
(n=30)	**BT**	**AT**						
Abdominal Girth	88.93	82.60	6.33	7.12↓	2.72	0.50	12.75	P<0.001
Dist. bet. Umbilicus - xiphisternum	19.86	16.76	3.10	15.60↓	1.63	0.30	10.44	P<0.001
Dist. bet. Umbilicus – pubis	16.90	13.67	3.23	19.13↓	1.91	0.35	9.29	P<0.001
Dist. bet. Umbilicus – RAS iliac crest	25.00	19.07	5.93	23.73↓	4.94	0.90	6.57	P<0.001
Dist. bet. Umbilicus – LAS iliac crest	24.00	20.20	3.80	15.83↓	3.44	0.63	6.05	P<0.001

Table 3: Effect of *Amalakyadi Kwatha* on various parameters of ALD in supine position

Parameter	**Mean score**		**Mean diff.**	**% change**	**SD**	**SEM**	**t**	**P**
(n=30)	BT	AT						
Abdominal Girth	80.47	74.73	5.73	7.13↓	4.48	0.82	7.01	P<0.001
Dist. bet. Umbilicus - xiphisternum	21.53	17.80	3.73	17.34↓	1.46	0.27	14.00	P<0.001
Dist. bet. Umbilicus – pubis	21.20	17.13	4.07	19.18↓	1.80	0.33	12.38	P<0.001
Dist. bet. Umbilicus – RAS iliac crest	20.80	16.73	4.07	19.55↓	2.27	0.42	9.80	P<0.001
Dist. bet. Umbilicus – LAS iliac crest	21.00	17.47	3.53	16.83↓	2.25	0.41	8.58	P<0.001

Table 4: Effect of *Amalakyadi Kwatha* on SGPT and SGOT values of ALD patients

Parameter	**Mean score**		**Mean diff.**	**% change**	**SD**	**SEM**	**t**	**P**
(n=30)	BT	AT						
SGPT	259.93	43.4	216.53	83.30↓	157.69	28.79	7.52	P<0.001
SGOT	296.10	51.40	244.70	82.64↓	137.54	25.11	9.75	P<0.001

Chart 1: Effect of *Amlakyadi Kwatha* on various parameters of ALD in sitting position

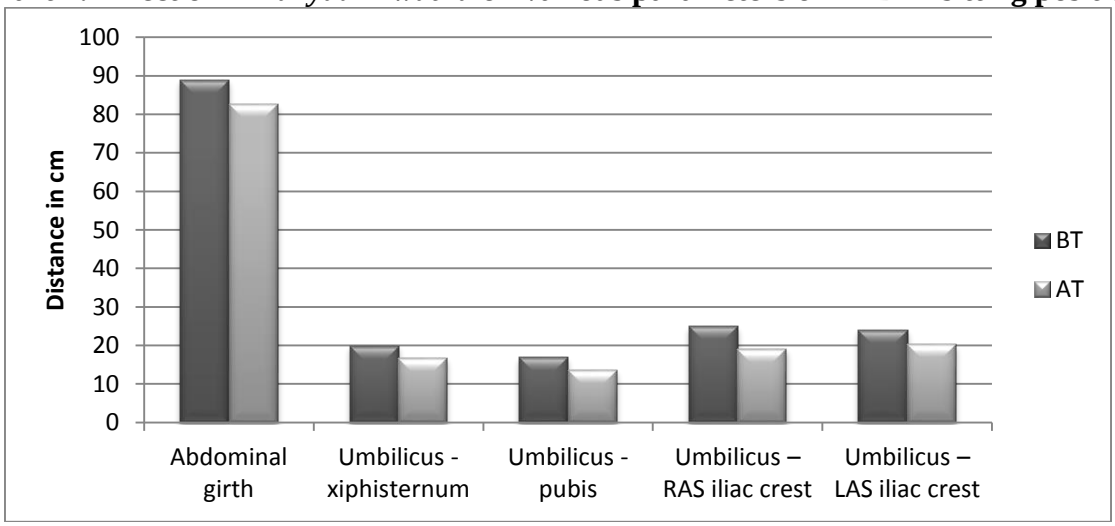


Chart 2: Effect of *Amlakyadi Kwatha* on various parameters of ALD in supine position

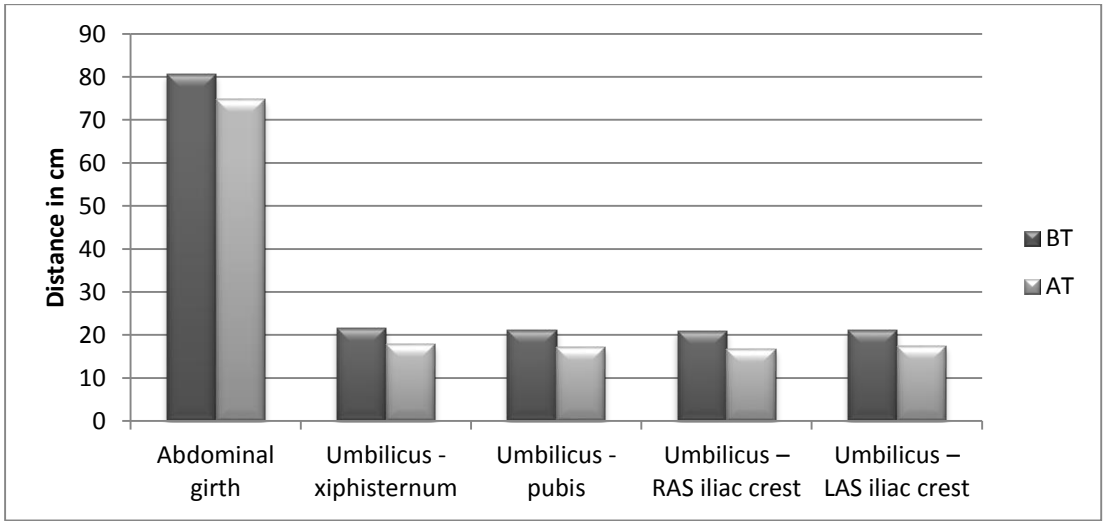
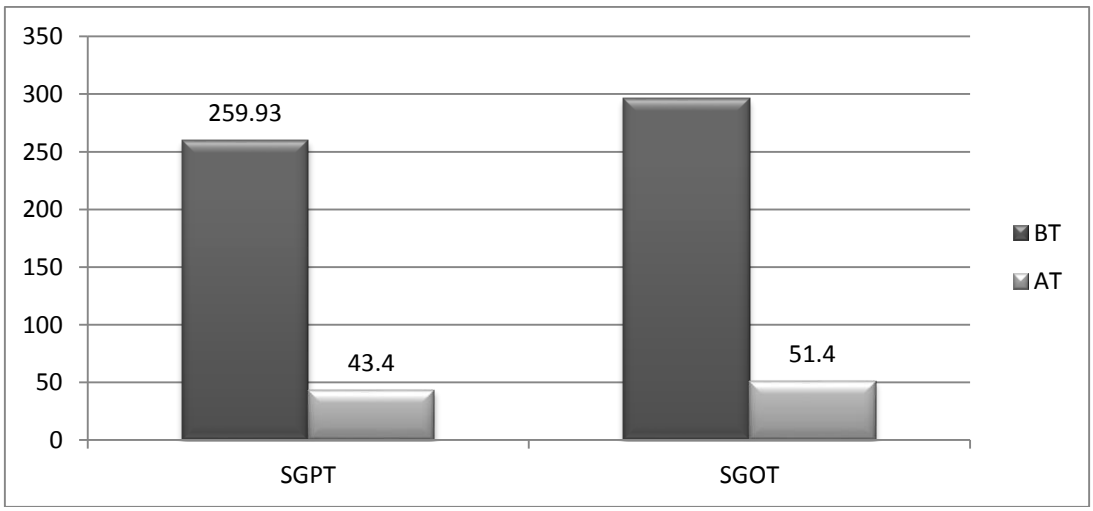


Chart 3: Effect of *Amalakyadi Kwatha* on SGPT and SGOT values of ALD patients



References

1. Ravidatta Tripathi, Charakasamhita with Vidyamanorama Hindi commentary, Chaukhamba Sanskrit Pratishthan, delhi, 2009. 13/34, Pg. 296
2. Ravidatta Tripathi, Charakasamhita with Vidyamanorama Hindi commentary, Chaukhamba Sanskrit Pratishthan, delhi, 2009. 13/33, Pg. 295
3. Kasper DL, Braunwald E, Fauci AS, Hauser SL, Longo DL, Jameson JL, Loscalzo J. (2008). Harrison's principles of internal medicine (17th ed.). New York: McGraw-Hill Medical Publishing Division. Pg. 1180
4. Kasper DL, Braunwald E, Fauci AS, Hauser SL, Longo DL, Jameson JL, Loscalzo J. (2008). Harrison's principles of internal medicine (17th ed.). New York: McGraw-Hill Medical Publishing Division. Pg. 1192
5. Phadake G. A., Dravyagunashastra, 1960, Pg. 149.
6. Phadake G. A., Dravyagunashastra, 1960, Pg. 332.
7. Phadake G. A., Dravyagunashastra, 1960, Pg. 194.
8. Shailaja Shrivastava, Sharangadhara Samhita with Jeevanaprada Hindi commentary, Chaukhamba Orientalia, Varanasi, 2009. 4/6. Pg. 31
9. Available from http://www.livestrong.com/article/126004-signs-liver-problems-alcohol/
10. Available from http://www.medicinenet.com/edema/page5.htm
11. Anonymous. The wealth of India. Vol. 3, National institute of science communication and information resources, CSIR, New Delhi. Pg. 77
12. Patki et al, J. Res Educ Indian medicine 1990, 9(4), 33
13. Rajwade et al, Indian J pharmacol, 1989, 21, 50.
14. Rao et al, Indian J pharmacol, 1989, 21, 52.
15. Anonymous. The wealth of India. Vol. 3, National institute of science communication and information resources, CSIR, New Delhi. Pg. 311
16. Ramesha Chander et al, Indian J Med. Res, 1990, 923, 34.

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