



Review Article

EVIDENCE BASED *PATHYAPATHYA* IN *JALODARA*/HEPATIC CIRRHOSIS COMPLICATED BY ASCITES- A NARRATIVE REVIEW

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**ABSTRACT**

*Jalodara* is one type of *Udararoga*. *Udararoga* is included among *Ashtaumahagada* by *Acharya Charaka* which denotes its critical prognosis. The accumulation of fluid in peritoneal cavity is termed as Ascites. Cirrhosis clinical manifestations presents as a much later which makes it difficult to trace in the initial stage. Nearly 30% to 40% of cases are only discovered during autopsy, indicating that in extensive proportion of people, the disease goes undetected during life. The Ayurvedic management of *Jalodara* mainly focuses upon correcting *Agni*, *Sroto Shodhana* and most important being the maintenance of through a strictly followed *Pathyapathya*. Classical texts suggest a general guidance of salt, water and fat restricted diet with milk as primary source of nutrition initial 3 months to 6 months of treatment. Choice of milk has been Camel milk which is explained in *Charaka Samhita* which acts both as *Ahara* and *Aushadha*. Here, an attempt is made to find out evidence based *Pathyapathya* (diet regimen) which is effective in the management of *Jalodara*/hepatic cirrhosis complicated by ascites. Previous studies and research papers are analyzed and also data from P. D. Patel Ayurveda Hospital is collected and inferred. The data reveals that diet comprising of *Masur dal* soup, *Ksheeravritti* (milk diet) followed by Camel milk or Cow milk, along the lines of Ayurvedic principles will yield good result.

**INTRODUCTION**

*Udara roga* is one among the *Ahstamahagada* that which is difficult to treat with curative results. The diseases that are manifested in the abdominal cavity causing the distension of the abdomen are termed under *Udara roga*. In this condition, *Agni* plays a major role in the manifestation of disease where the *Aprakrutha Aharapaka mala*, and all *Malaswaroopa* gets accumulated in the *Udara*, which further leads to the *Ghoravyadhi*. Here *Mandagni*, *Malinabhojana* and *Mala sanchaya* are considered as main *Nidan*<sup>[1]</sup>. Ayurveda emphasizing on being healthy, has a detailed description from the initiation to manifestation of disease. *Udara Roga* is a progressive disorder whose diagnosis is done based on the different stage of presentation.

It is explained that when intervention is not done on appropriate time eventually the end stage presentation will be *Jalodara*. Although *Jalodara* is said to be *Asadyavyadhi*<sup>[2]</sup>, the hepatoprotective herbal medicines and following a restricted diet regime as described in Ayurveda has been proved to have given positive results. On the other hand, there seems to be no definitive answers in contemporary medicine to cure this grave disease. A diet regimen with skimmed cow / camel milk in *Jalodara* helps in the regression of the symptoms and maintenance of nutritional status of the patients.

The accumulation of fluid in the peritoneal cavity is termed as ascites. Cirrhotic ascitic fluid accumulation results from a number of factors broadly defined in terms of hormonal and cytokine dysregulation and related volume overload in the setting of portal hypertension. Survival from ascites majorly depends on severity of portal hypertension, liver failure, and circulation dysfunction. Management of ascites is targeted on diuretics and dietary salt should be restricted to a no added salt diet of 5.2g salt/day.

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## OBJECTIVES OF THE RESEARCH

- To find out the unique and complete dietary regime for the patients of *Jalodara* (ascites due to hepatic cirrhosis) by reviewing various research studies.
- To evaluate the effect of the proposed diet system in the management of *Jalodara* (ascites due to hepatic cirrhosis).

## MATERIALS AND METHODS

- Various literature, clinical and review articles were selected for study.
- Expert opinion was collected from clinically experienced practitioners.
- Data related to management of *Jalodara* (ascites due to hepatic cirrhosis) was collected from P. D. Patel Ayurveda hospital Nadiad and the results were analyzed [3,4,5,6].

## Proposed Treatment

Management of complications of malnutrition are essential to improve clinical presentations for patients with cirrhosis. It is estimated that 50% to 90% of individuals with cirrhosis have malnutrition which is why a proper diet protocol after assessing the status of patient is important.

## Nutrition Management

The management of nutritional status of hepatic cirrhosis patient in four stages.<sup>[7]</sup>

- The first nutritional priority for the patient with cirrhosis is to promote overall adequate intake, regardless of the macronutrient distribution. When a proper nutritional regimen is planned it can reduce the chances of the fasting state in the body and in turn prevents muscle catabolism.
- After a patient is working toward improvements in overall caloric intake, then education can shift toward the second priority: protein intake. Protein requirements are recommended to be 1.0 to 1.5g/kg dry body weight.
- The third nutrition priority for patients with cirrhosis involves the ideal composition and frequency of meal and snack intake. The pathology in the liver's ability to store glycogen, intake of carbohydrate in conjunction with protein ensures proper allocation of protein for muscle maintenance and rebuilding. Having these mixed macronutrient meals and snacks at regular and frequent intervals throughout waking hours helps the patient meet nutritional needs and reduce the time the patient's body is spent in a fasting state. Therefore, it is recommended that patients have a bedtime time snack containing carbohydrate and protein.
- Once a patient is meeting the earlier nutrition recommendations, then a discussion regarding the source of protein may be the next step in optimizing nutrition care.

- Recommended protein food sources include:- Dairy Cow's milk (1 cup) 8g, cheese (1 oz) 7g, grain lentils (1/2 cup cooked) 9g, sprouted grain bread (1 slice) 4g, wild rice (1/2 cup cooked) 3.5g vegetable soy milk (1 cup) 8g peas (1 cup) 8g beans (1/2 cup) 7-10g peanut butter (2 tablespoons) 8g nuts (1 oz) 6g almonds (1 oz) 6g broccoli (1 cup) 2.5g corn (1 cup) 4g soy beans (edamame, 1/2 cup) 8.5g, protein powder Whey (1 scoop) 25g casein (1 scoop) 25g pea (1 scoop) 25g animal based egg (1 large) 6g chicken (1 oz) 7g beef (1 oz) 7g pork (1 oz) 7g fish (1 oz) 7g.

## Dietary guidelines in Ayurveda

Management of *Udara roga* presenting *Jalodara* as perceived in Ayurveda focuses on *Mala Nirharana* by the means of *Nityavirechana*, supplementing necessary vitamins to assuage the malnutritional status removing of accumulated fluids without harming the *Bala* of *Rogi*, restoring the *Agni* by expelling *Bahu dosha* and normalizing *Prana-agni-apana* by inducing *Vatanulomana*. Once *Apana* starts moving its *Prakrutamarga* all other *Vata* attains normalcy. Removal of mala through *Mootra* is done by administering *Mootrayukta teekshna ksharadio ushadhis*. The *Abadha- Asthirakaphasamoorcha* with *Udaka* gets broken by *Rooksha teekshnaushnagunas* of *Mootra* and enhances the *Agni*. Administration of milk over a period of 12 months is the most effective diet modification which not only manages the nutritional requirement but also helps in modifying the disease pathology. The *Pathya Kalpana* for *Jalodara* <sup>[8]</sup> condition is registered as *Raktashaali Odaka, Anoopajamamsa/shaaka, Yava Pishtakrutha Mudga, Jangalarasa. Apathya* <sup>[9]</sup> *Ahara* and *Vihara* is that which needs to be avoided are *Vyayama, Divaswapna, Ashwadi Yaana, Arishta Asava Ushna/ amla/ Lavana/ Vidahi/ Guru/ Abhishyandi - Bhojana, Madhu, Seedhu, Sura*.

## Role of Milk in the Management of *Jalodhara* <sup>[10]</sup>

*Ushtri Dugdha* is specially mentioned for *Jalodara* by Acharyas. In the absence of *Ushtri Dugdha*, *Godugdha* is preferred by Acharyas. *Godugdha* (cow milk) is only complete food which is full of nutrients and easily digestible. Following diet regime is recommended:

- 6 months- *Ksheeravritti* (only milk)
- 3 months- *Peya* (A type of recipe made with rice which is easy to digest) and *Ksheera* (milk)
- 3 months- *Jeernashyamaaka, Kodrava, Aalpasnehavilavana* with *Paya/Phalaamla/Jaanghalamamsa* (whole diet).

Buffalo milk is also preferred (as per opinion, whose *Agni* is not so poor) to be taken for 1 week and cereals should be avoided <sup>[11]</sup>.

Camel milk with *Trikatu* is advised for 1 month (Potassium salt gives *Lavana rasa* to *Ksheera* in sodium pool, potassium is exchanged for sodium thus reduces sodium retention and in turn water retention) [12,13,14].

In an average 100 patients with *Jalodara*/hepatic cirrhosis complicated by ascites are treated per year at P. D. Patel Ayurveda Hospital, Nadiad. Based on proven clinical evidences the regime in Table 1 is proposed,

**Table 1: Diet Preferred in P. D. Patel Ayurveda Hospital, Nadiad**

First 6 Months	Next 3 Months	Last 3 Months
Milk - <i>Ushtrapaya</i> (since it is alkaline in nature- reverse osmosis)	Milk - <i>Ushtrapaya</i> (since it is alkaline in nature- reverse osmosis)	Milk - <i>Ushtrapaya</i> (since it is alkaline in nature- Reverse osmosis)
<i>Masura</i> soup	<i>Mudga, Masoora, Kulattayusha</i>	<i>Mudga, Masoora, Kulattayusha, Raktashali, Purana shali</i>
<i>Gomutrayuktakamaahishadugdha</i> (if <i>Agni</i> is not poor).	<i>Raktashali, Purana shali</i>	<i>Shigruphala, Cauliflower, brinjal, bottle guard, bitter guard, Taambulapatra, Ela, Rasona, Ardraka,</i>
<i>Triphalayukttagoksheera.</i>	<i>Takra</i>	<i>Yava, wheat flour (coarse)</i>
<i>Gomutra.</i>	<i>Takra</i>	<i>Takra</i>
<i>Takra</i>	<i>Papaya, sweet apple, black raisin</i>	<i>Papaya, sweet apple, black raisin</i>
<i>Papaya</i>	<i>Chyavanaprashavaleha</i>	<i>Chyavanaprashavaleha</i>
<i>Chyavanaprashavaleha</i>		

## DISCUSSION

The science of nutrition at the present times evolved as an elaborate and organized subject of study, even then contemporary perspective [15] mull over core components of diet like carbohydrates, fats, proteins, minerals, water etc. While Ayurveda focuses on diversified aspects of dietetics and nutrition like the quality, quantity, processing methods, rationale of combination of food articles, emotional aspects, nature of the consumer, geographical and environmental conditions etc., which are play a pivotal in preservation and promotion of health and prevention of disease.

Ayurveda emphases [16] that food article can become wholesome or unwholesome based on the permutations and combinations to several persisting factors. So, the natural qualities of dietary articles and regimen as well as the conditions like quantity are required to be well ascertained before the administration of a diet or requisite therapy in order to achieve the desired effect. Similarly, there are some dietary articles, which naturally wholesome in almost all circumstances and they are readily acceptable such as *Rakta Shali* rice, *Mudga* among pulses, *Saindhava*, cow milk, cow ghee etc.

*Mudga* is considered as the best among *Shamidhanya* and *Kalaya* is categorised as worst but if on the perspective of nutritive value is taken it is noted that *Kalaya* has more protein content than *Mudga*. Clinical proofs suggest that *Mudga* has both nutraceutical and pharmaceutical properties. Acharyas have explained the concept of pharmacokinetics and pharmacodynamics of a drug in terms of *Rasa* (taste present in the drug), *Guna* (properties), *Virya* (potency), *Vipaka* (final taste after digestion of the

drug) and *Prabhava* (specific effects). The action of a drug is completely based on the *Rasapanchaka* of that drug. Individual assessment of patient's constitution and diet preferences need to be understood while planning diet. Scope for more studies on this domain is inferred in this paper.

### Reason for Selection Milk as Diet

Camel milk has valuable nutritional and therapeutic properties of consisting of high proportion of antibacterial and antioxidant substances like vitamin C as well as iron in comparison to cow milk. Intake of camel milk helps to control blood sugar levels and also helps in preventing variety of infection including gastroenteritis, tuberculosis, and cancer. The camel milk also cures severe food allergies and rehabilitates the immune system in children [17].

Protein is a must to correct reduced osmotic pressure of plasma. Among proteins animal protein is easily digestible than plant origin, while treating Ascites factors to be kept in mind are:

- It should not cause constipation.
- Fat content should be less.
- Should not lead to malnutrition

### Milk fulfills all these qualities

Patients may benefit from a higher percentage of protein intake from plant-based and dairy-sourced protein. The increased intake of branched- chain amino acids (BCAAs) protein from plant-based and dairy sources shows pathophysiological changes with amino acid metabolism and insulin resistance in patients with cirrhosis, further there is an imbalance of BCAAs available for protein synthesis in skeletal

muscle. Increased intake of BCAA will improve appetite, increase muscle synthesis, and have an impact in improving quality of life [18].

*Kashaya rasa* bring most *Rukshata* and *Shoshana* of *Dhatu*. *Rukshaguna* also does *Shoshana* which helps in *Shrotoshodhana* which mitigates the *Kaphadosha* and dries up the *Kleda* and *Medadhatu*. *Kashaya rasa Yuktaahara* is guru in nature, which are not easily digestible. *Madhura rasa* and *Sheetavirya* helps in reliving *Ati Trishna*. With the help of its properties like *Ruksha*, it does *Rukshana* and also aid in reducing *Meda dhatu*. *Kashaya rasa* is useful in wound healing through *Shoshana* properties. *Sheetavirya* helps in nourishing, promotes growth and strength of the body.

Green gram plays an important role to preventive and supportive dietary supplement as a staple food. *Mung* beans have several pharmacological activities and it's scientifically proved. Studies suggest that the antioxidant effects *Mung* bean extracts have a potent scavenging activity against pro-oxidant species, including reactive oxygen species and reactive nitrogen species as well as an inhibitory effect on low density lipoprotein oxidation.

Regular eating of *Mung* beans can normalize the flora of enterobacteria, reduces absorption of toxic substances, decreases the chance of hypercholesterolemia and coronary heart disease, and prevent cancer. Research studies showed that *Mung* bean extract is acting against lethal sepsis thought provoking autophagic HMGB1 degradation.

The above mentioned studies aids in proving the potency of *Mudga* preventing various chronic and lifestyle disorders. *Mudga* has been prescribed as a *Pathyaahara* in a broad range of disorders like *Agnimandya* (loss of appetite), *Amlapitta* (hyperacidity), *Udara* (ascites) etc. The daily intake of *Mudga* as a food and therapy in *Jalodara* helps in maintaining the nutritional status and regenerate the liver cells [19].

## CONCLUSION

Nutrition plays an important role in maintenance of a healthy status. In diseases related with liver the metabolic activity is greatly hampered which further worsens the prognosis of the disease. When a systemically calibrated diet regime is followed the recovery is fast. Diet followed in contemporary science with regards to management of *Jalodara*/hepatic cirrhosis complicated ascites has certain limitations, whereas Ayurveda pronounces a diet protocol that manages the *Jalodara*/hepatic cirrhosis complicated ascites condition and also helps in regeneration of liver tissues. Evidences related to the diet compiled from various literature and hospital data shows that Camel milk when administered alone

with medicines for a period of 12 have positive results in management of *Jalodara*/hepatic cirrhosis.

## REFERENCES

1. Acharya YT, editor. Charaka Samhita of Charaka, Chikitsa Sthana. Reprint Edition. Ch. 13. Ver. 11. New Delhi: Chaukhambha Publications; 2016. p. 491.
2. Ayurvedic Management of Jalodara w.s.r. to Chronic Liver Disease - A Case Study, International Journal of Emerging Technologies and Innovative Research (www.jetir.org), ISSN: 2349-5162, Vol.8, Issue 10, page no. a529-a533, October-2021, Available:http://www.jetir.org/papers/JETIR2110065.pdf
3. Bhagiya SG, Shukla RB, Joshi NP, Thakar AB. A single-case study of management of Jalodara (ascites). Ayu 2017; 38:144-7
4. S.R.Tarapore, R.A. Shaha, J.D.Khot. Management of Ascites (Jalodara) Through Ancient System of Medicine- A Case Report. AYUSH [Internet]. 2020 Sep.25 [cited 2021Nov.27]; 7(4): 2798-804.
5. Dr. Manjunath Kotihal, Totad Muttappa, Vasantha B, & Sandrima KS. (2017). Critical analysis of Jalodara (Ascites) - A Review. Journal of Ayurveda and Integrated Medical Sciences, 2(01), 150-153. Retrieved from <https://jaims.in/jaims/article/view/113>
6. Plauth M, Cabre E, Riggio O, et al. ESPEN guidelines on enteral nutrition: liver disease. Clin Nutr 2006; 25: 285-294.
7. Acharya YT, editor. Charaka Samhita of Charaka, Chikitsa Sthana. Reprint Edition. Ch. 13. Ver. 11. New Delhi: Chaukhambha Publications; 2016. p. 491.
8. Acharya YT, editor. Charaka Samhita of Charaka, Chikitsa Sthana. Reprint Edition. Ch. 13. Ver. 11. New Delhi: Chaukhambha Publications; 2016. p. 491.
9. D. Patel, E., Maurya, S., Kamemori, N., & Dudhamal, T. (2020). Role of Kshira in the management of Jalodara (Ascites) - A Brief review. The Healer, 1(1), 36-38. <https://doi.org/10.51649/healer.6>
10. Tarun-shridhar-buffalo-milk-animals-india-news-south-asian-world-news-[https://www.fairobserver.com/region/central\\_south\\_asia/17837/“Don't Allow the Buffalo in India to Be Cowed Down.”](https://www.fairobserver.com/region/central_south_asia/17837/Don't-Allow-the-Buffalo-in-India-to-Be-Cowed-Down.) Fair Observer, July 2020.
11. Amjad Ali Khan and Mohammad A. Alzohairy Hepatoprotective Effect of Camel Milk against CCl4 Induced Hepatotoxicity in rats Asian Journal of Biochemistry Year: 2011 | Volume: 6 | Issue: 2 | Page No.: 171-180.
12. Abdel Gader A.G.M., Alhaider A.A. The unique medicinal properties of camel products: A review

- of the scientific evidence (2016) Journal of Taibah University Medical Sciences, 11 (2), pp. 98-103.
13. Hamman, Ahmed R.A. "Compositional and therapeutic properties of camel milk: A review." Emirates Journal of Food and Agriculture, vol. 31, no. 3, Mar. 2019, pp. 148+. Gale Academic One File,
  14. Medici V, Mendoza MS, Kappus MR. Liver disease. In: Mueller CM, ed. The ASPEN Adult Nutrition Support Core Curriculum, 3rd edn. Silver Spring, MD: American Society for Parenteral and Enteral Nutrition; 2017.
  15. Nutritional Discipline In Ayurveda: Prospective For Translational Research Article In World Journal Of Pharmacy And Pharmaceutical Sciences. July 2015
  16. TY - JOUR AU - Kumar, Narendra PY - 2015/12/22 SP - T1 - Camel milk: Natural medicine - Boon to dairy industry O - Dairy Foods ER -
  17. Vigna Radiata (L.) R. Wilczek] Dietary And Therapeutic Effect Of Mudga: A Review Article In Journal Of Pharmaceutical And Scientific Innovation · August 2020
  18. Radiata (L.) R. Wilczek] Dietary And Therapeutic Effect Of Mudga Vigna: A Review Article in Journal of Pharmaceutical and Scientific Innovation · August 2020
  19. Radiata (L.) R. Wilczek] Dietary And Therapeutic Effect of Mudga Vigna: A Review Article in Journal of Pharmaceutical and Scientific Innovation. August 2020

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