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## RESEARCH ARTICLE

# ROLE OF VIRECHAN WITH NARAYAN CHURN IN THE MANAGEMENT OF YAKRITARBUDA (HEPATOCELLULAR CARCINOMA)

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### ABSTRACT

Hepatocellular carcinoma(HCC) is a kind of primary hepatic cancer that begins in liver cells (hepatocytes) damaged by birth defects, cirrhosis, alcohol or drug abuse, contamination of food, poor eating habits and regimen, hemochromatosis, or severe infection with many viruses such as hepatitis B and C. Cancer is an illness that occurs when abnormal cells sprout too quickly and occupy a lot of space, leaving fewer living space for normal cells to reside. A cancerous growth can interrupt almost all of the liver's functions. Its cause is usually attributed to environmental, dietary, or lifestyle factors. Surprisingly, men have four times the incidence of HCC than women. Prolonged damage and inflammation, regardless of the cause, advancement through fibrosis, cirrhosis, and finally HCC, where the cancerous lesion usually begins. In Ayurveda the "Yakritarbuda" is not specifically described. Ayurvedic experts have given many names to liver-related disorders that fall under the category of abdominal diseases. The clinical manifestations of yakritarbuda are virtually identical to the disease described in the Ayurvedic text as Kamala Roga. Yakritarbuda is a Pitta-dominant disorder of aavarana of Kapha and Meda at the site of khavaigunya, which necessitates the use of Pitta Virechaniya and Koshtha Sodhaka drugs to remove vitiated and agitated doshas from the body. Due to its therapeutic potential, Narayana churna can easily carry out these functions.

## INTRODUCTION

Ayurveda does not have a specific description of the "Yakritarbuda." Ayurvedic experts have given many names to liver-related disorders under abdominal diseases, such as liver disease, liver enlargement, and Yakritdaludara. It can be classified as Pittaburda or Yakritudara depending on its location and the characteristics of the vitiated dosha. Several diseases have been provided a link to Arbuda, but cancer is a very similar disorder. Sushruta and Charaka Samhita, both well-known Ayurvedic texts, refer to cancers such as inflammatory or non-inflammatory bulging as Granthi or Arbuda. Acharya Madhava believes that the vitiated Dosha is affected by Mamsa and Rakta, both of which lead to swelling, when describing Arbuda. This concern is clearly outlined in Ashtanga Hridaya, which was authored much later. Hepatocellular carcinoma is a type of primary liver cancer. Cirrhosis, a situation of the liver caused by alcohol consumption, directly impacts more than half of all people with the disease of primary liver cancer(HCC). Hepatitis B and C, as well as hemochromatosis, can all cause irreversible liver damage and failure. Moreover, metabolic disorders such as diabetes, fatty liver, and adiposity are thought to be significant risk factors for liver cancer. Herbicides and cancer-causing chemicals, such as vinyl chloride and arsenic, as well as alcohol and smoking abuse, have been related to primary liver cancer and increase the risk. Cancer-causing components produced by a plant mould have also been linked to the outbreak.

Grains, peanuts, rice, corn, and soybeans can all be contaminated with aflatoxin. Among most developed countries, including the United States, these are unconventional issues. HCC is unusually rare in the United States, but its prevalence is increasing, possibly as a result of the spread of hepatitis C infection.

## MATERIALS AND METHODS

Ayurvedic Shodhan treatment under Panchkarma, with its broad range of activities and inodorous significance in correcting imbalances of bodily elements. As a matter of fact, substantial effort is being expended. Vayahsthapana, Balya, Jeevaniya, and other properties of purification therapy are used to efficiently hydrate all Dhatus and revive basic homeostatic balance. According to Acharya Charaka, no abdominal disease can occur without the manifestation of agni (digestive fire) inconvenience of aggravated Tridosha. Pitta Dosha is the leading factor responsible for metabolic activities; the other doshas only appear as anubandha to it. As a result, Pitta Dosha is the primary cause of liver dysfunction. As a result, it should be addressed first. In the Ayurvedic classics, no separate management of Yakritarbuda is mentioned. "Virechanam pittaharanam" (cha.su.25/40). Liver is the main site of pittaso virechan karma is the best therapeutic procedure for liver detoxification mentioned by acharya in ayurveda. That is why, as suggested by Acharya Charak in Udara Chikitsa chapter 13, Virechan with Narayan Churn is the effective therapeutic procedure for

getting rid of vitiated dosha via the rectal route (*adhovirechan*). In the Ayurvedic Classics, aggravated dosha and accumulated waste products in the liver produce a toxic effect (a carcinogen) on the liver cells (hepatocytes), which is referred to as Dushi Vish. In the condition of Arbuda, they do not ripen due to the predominance of Kapha and Medas (suppuration or ulceration). In Dushi vish also has the same characteristics. There is a kapha aavaran, and medo dhatu means fibrosis. As a result, the gati of doshas from shakha to kostha is challenging. So, the above-mentioned procedure is the best therapeutic choice for removing this Dushi Vish vs. Carcinogenic Factor in HCC. Charak Samhita mentions "Narayan Churan," which has properties such as vata kapha shamaka, pittarechak, kriminashak, vishaghna, deepan, and pachan. The granthi is a local growth and the effect of tumour is systemic (related sources) |The tumor affects all the activities of the affected organ but has no effect on the normal functioning of the system in the glandular or benign enlargement.

### Basic Concept of Study

- Site of disease: Pradesha- Liver
- Causative Factor: Carcinogenic Factor V/S Dushi Vish
- Anuloman of Vata, root cause of Proliferation of Tissues (Vibhajan).

Ayurveda is a universal and ancient scientific discipline. As per Ayurvedic fundamentals, Pancha mahabhoota is the compositional, functional, and organisational unit of the external creation (world) and the body. This is entirely genuine and rectified. Body fluids and drug-diet substances share a fundamental similarity, and this fundamental similarity serves as the foundation of Ayurvedic medicine. Based on the qualities of these causal elements, the nature of these doshas is reflected in the body as fixed guna-karma (pharmacological properties). When there is a variation from the normal state (dosha-dhatu, for example), the body becomes uncoordinated as a result of an increase or outbreak of the natural form of these doshas as a result of an incompatibility of diet, regimen, place, and time. According to the ancient texts, Arbuda is a kind of Granthi that manifests as distortion of Dushya Mansa and Medo Dhatu due to Kapha, Pitta Pradhana Tridosha, and Pachak pitta, aids in the maintenance of the dhatu paka. One of the issues for the initiation of Arbuda could be the impairment of Pachak Pitta. Pitta and Rakta both got Ashrayaashrayi Sambandha, which means that Rakta's pathology implies Pitta's pathology.

Pitta involvement is unavoidable in yakritudara. Classical Ayurvedic texts highlight the Meda Dhatu as the primary Dushya. To support this viewpoint, modern science proposes a hypothesis that viral hepatitis is the primary problem in the cause of Yakritarbuda/Yakrit Vikar (Liver Diseases). Liver diseases are classified into two types. One is digestive issues such as anemia, leukemia, and jaundice. Another one is a few diseases, such as liver cancer, abscesses, and swelling, are self-centered. Following liver cancer, the major liver pathologies are infection or irritation, inflammatory liver disease, cirrhosis, and so on. Symptoms include loss of appetite, diarrhea, flatulence, and pain in the liver region. The liver filters the blood and helps to neutralize the toxic effects of the patient's substances. As a result, patients who consume large quantities of harmful substances are unable to neutralize them. Cirrhotic patients should therefore avoid drinking tea, coffee, tobacco, or alcohol before taking medication. A fatty, crispy, outrageously hot and spicy diet, as well as a sour, difficult-to-digest diet, are Agnimandya (lack of digestive power) or Ajirna ailments (indigestion). Excessive and regular alcohol consumption, as well as smoking and tobacco products and eating antagonistic foods, can all play a part in liver disease. The accumulation of doshas and decay of dhatus, as well as the obstruction of organ functions and paths, and excessive blockage of important sources, characterise the disease's lethality and severity. As a result, we must manage the disease while also restoring the balance and elemental movement of dosha-dhatu-mala in the body. Too much intake of packaged foods, tea, coffee, tobacco, and alcohol; lack of physical activity and sleep; and as doshas accumulate, our liver becomes malformed and incapable of removing toxic substances from the body.

Toxic substances continue to accumulate and manifest as poison as a result. This toxic substance is known as amvish, garavish, and dushivish in Ayurveda. Acharya mentioned Dushivish's inherent properties, such as ushna, tikshan, ruksha (dryness), laghu (lightness), sukshma (subtleness), and vishad (non-sliminess), among others. They are, however, fundamentally opposed to the Ojus (strength). This dushi vish strongly resembles the carcinogen factor, according to modern science. Both of these factors steadily excite the defects in the body, resulting in serious consequences by gradually demolishing the body's basic elements. According to contemporary science, AFP is a significant biomarker for HCC. However, transformed liver cancer cells can re-produce AFP, and levels are often elevated in HCC patients. Low serum AFP concentrations are commonly associated with very specific cancers. Normal AFP levels, on the other hand, can be found in up to 40% of early-stage HCC cases and 15-20% of advanced HCC cases.

### DISCUSSION

Cancer is a disease that arises when abnormal cells sprout too quickly and occupy a large amount of space, leaving very little space for normal cells to reside. A cancerous growth of the liver can impair nearly all of the liver's functions. Its cause is usually linked to environmental, dietary, or lifestyle factors. Unexpectedly, men have four times the rate of HCC as women. Prolonged damage and inflammation, irrespective of the cause, develop through fibrosis, cirrhosis, and ultimately HCC, where the neoplastic lesion usually starts. The liver is a vital organ in our bodies. We are completely reliant on food for the balance of doshas in our bodies and the nourishment of dhatu. Everything we eat has a significant impact on our liver because it is the primary storage location for bile and, in addition to digesting food, purifies our blood and removes toxins from the body. Our liver, however, is unable to properly digest food due to our modern lifestyle, which includes night awakening, daydreaming, unsustainable velocity, eating more junk food due to mental stress, and eating inappropriate food. Because of the adulteration of harmful toxins in it, it raises the price of most food items to make them more appealing. HCC is a complicated disease with many factors contributing to its aetiology. Diabetes, obesity, AFLD, non-alcoholic fatty liver disease, hepatitis B, and C are all significant risk factors for HCC (NAFLD). Tobacco use, aflatoxins in food, familial or genetic factors, and various environmental toxins that act as carcinogens have all been linked to an increased risk of HCC.

Liver cell injury results in inflammation, necrosis of hepatocytes, and regeneration, all of which contribute to HCC. Chronic liver disease symptoms include fibrosis, cirrhosis, and hepatocellular carcinoma. HCC is a type of cancer that frequently occurs in conjunction with CLD and cirrhosis. It is detected late in its progression, and at this point, liver transplantation is the best treatment option. Surgical resection, radiofrequency ablation, transcatheter arterial chemoembolization (TACE), radioembolization, and systemic targeted agents such as sorafenib are all options for treating HCC, depending on the extent of the tumour and underlying liver dysfunction. Furthermore, because the aetiology of HCC determines the course of illness and health status, the viable treatment options available to patients are based on it. As HCC treatment has improved, the demographic landscape has shifted. We will summarize the traditional risk factors in this mini-review before focusing on fatty liver disease, an emerging etiological risk factor contributing to the rising incidences of HCC. Acharya Charaka reveals the Yakritvikara under the section of Udara roga. As a result, the factors that aid Rakta pradosha can also be considered Yakritarbuda etiological factors. Viruddha Ahara is the important causative aspect of Yakritarudara in general and in particular (incompatible diet).

These Ahara are responsible for Ama's formation. Ama may interfere with nutrient absorption, which has been identified as a contributing factor to Uदारaroga and yakrit vikara. Charaka stated that yakrit udara is caused by thirteen forms of agni and five forms of pitta dosha manifestation. Yakritarbuda's clinical features are strikingly similar to those described in Kamala Roga, an Ayurvedic text, because bile formation, a major function of hepatocytes, is disrupted. Clinical

signs of *Yakritarbuda* (HCC) are *Kamala*, generalised weakness, nausea, vomiting, anorexia, indigestion, distention, diarrhoea, tenderness, *kostha-vata shool*, fever, malaise, loss of appetite, *varchomutra nigraya*, excessive thirst, and *yakrit vridhi* (enlargement). However, only weakness, nausea, anorexia, indigestion, loss of appetite, and *varchomutra nigraya* were observed in almost all patients, with other lakshanas manifesting in patients with advanced stages of disease. *Arbuda* has been defined and described by all of *Brihutrasi great Acharyas*. *Arbuda* is a massively complex condition caused by localized growth or swelling caused by *vitiated doshas'* excessive obstruction of *srotas*. *Dhatu-vridhi* disorder (unusual inflammation of bodily tissues) is specifically mentioned under terms such as *Arbuda* and *Granthi*. According to *ayurvedic* experts, *arbuda* is a magnified form of *granthi*. *Yakritarbuda* is a *Pitta*-dominant disorder with *aavaran* of *Kapha* and *Meda* at the site of *khavaigunya*, which presupposes *Pitta Virechaniya* and *Koshtha Sodhaka drugs* to eliminate *vitiated* and *aggravated doshas* from the body. Due to its pharmacological properties, *Narayana churna* can easily accomplish these tasks. *Danti*, *Indrayan*, and *Nisoth's tikta rasa*, purgative, laxative, and *Vatanulomana* actions expel *vitiated Pitta Dosha* from the body via the *Koshtha*. As a result, proper *Koshtha Shuddhi Srotasa* cleansing takes place at the cellular level. The elimination of *vitiated Pitta Dosha* from the *Koshtha* disrupts the sequence of events that occur in the pathogenesis of *Kamala Roga*, stopping its progression. A substance or drug that has similar properties to *Rechana*, *Yakrita Uttejana*, *Pitta Virechaniya*, *Rakta Vishodhaniya*, pacifies *Pitta*, *Deepana*, and *Pachana*. *Krimighna*, *Katu tikta Rasa*, *Ushna Virya*, and *Katu Vipaka* are likely to treat *Yakritarbuda* pathogenesis. It is expected to target the disease's underlying cause and halt its progression. *Shodhana with Virechana Dravya* by *Narayan Churan* has been made clear by all the *Ayurvedic Acharyas* in the treatment of *Yakritudar*, *Pittarbuda*, *DushiVish Roga*, and *Pitta sthan vikara*. In *Pittarbuda chikitsa*, *Acharya Sushrut* explicitly mentions *Virechana Karma*. In the case of *Yakritarbuda*, *shodhana* is the specific treatment, especially for the *bhedan* type of *virechana*. *Bhedan* and *Virechan dravyas* are drugs that forcefully expel liquified formed and unformed excreta from the alimentary canal deep in the *srotas*.

#### Discussion on the Mode of action of *Virechana* with *Narayan churna*

**Rasa:** *Katu, Tikta Rasa*-has an impact on the *Gunataha Vikriti* (qualitative vitiation) of *Kapha, Vata Dosha, and Rasa, Rakta, Mamsa, and Meda Dhatu*. *Dosha aavaran*.

**Guna:** -Because of its *Laghu, Ruksha, and Tikshan gunas*, it aids in the breakdown of *aam dosha* pathogenesis and eliminates *pitta*.

**Vipaka:**-*Katu vipaka* acts on the *Gunataha Vikriti* (qualitatively vitiated) of *Pachaka* and *Bhrajaka Pitta*, aiding in the removal of *mala* from *rasa* and *rakta dhatu*, reducing *kandu* (itching), *vaivarnyata* (discoloration), and enhancing the effect of *virechana guna*.

**Ushna virya** influences *Sheeta guna* of *Dushita kapha* and *Vata dosha* and reduces *sanga* and *stambhana*. 5. *Prabhav Vata-kaphaghna, pittasarak, Adho bhaga dosahara, Kushtaghna, Tikshana Virechana* (*Koshtagata kapha-Pitta Nirharana*), *Vatanulomana, Raktashodhaka* are some of the *karma*.

**Virechanakarma:** *Virechana* is a unique *Panchakarma Sodhan chikitsa* therapy in which a potential drug combination with properties of *suksham, vyavayi, vikashi, ushana, tikshana*, and *adhobhagahar* given orally is eliminated from the body via the anal route, specifically *Pitta Dosha*. *Virechana Karma* was recommended by *Acharya* as the best treatment modality for *Pitta Dosha*. Because *Rakta* and *Pitta* are *Ashrayi ashraya bhavas*, *Virechana* aids in the elimination of *vitiated Pitta*. In diseases where *rakta* is the main etiological factor.

## CONCLUSION

*Yakritarbuda* is a *Tridoshaja* disorder characterized by an accumulation of *doshas* associated with the *Mamsa* in any area of the liver. *Yakritarbuda* is a circular, fixed, somewhat painful, wide, wide ranging, slowly growing, and non-suppurated lesion. Because the cellular growth is in the liver (the *pitta's* main site), there is involvement of the dominant *Pitta Dosha* and vitiation of *Rakta Dhatu*, as well as *Dhatu Dushti* of *Rasa, Mamsa, and Medas*. According to *Ayurveda Pittarbuda* can be linked to hepatocellular carcinoma (HCC) described in modern science. Hepatocellular carcinoma (HCC) is a collection of events and etiologies that are frequently associated with a variety of risk factors, including chronic hepatitis B and C virus infection, chronic alcohol consumption, aflatoxin B1 exposure, and metabolic syndrome. When the disease was first examined, the majority of the patients had only generalized weakness, mild pain, and heaviness in the right hypochondriac region, followed by loss of appetite, indigestion, and bloating, rather than any other manifestations. Jaundice has almost always developed in advanced stages of disease because the liver is the main location of bile formation. Scarring of liver cells *Fibrous tissues*, which replace the normal tissues of the liver, may correlate with the *kapha* and *meda janya aavaran*. The disease's stimulating factor is *dushi vish*, which remains in a dormant state coated with *kapha* and *medas* for an extended period of time before *vitiated dosha* and *deteriorating dhatus* in the liver, leading to the development of HCC. *Dushi vish* has the potential to be a *carcinogen*. *Suppuration* and *elimination* of *deformed substances* are not possible due to the *aavaran* of *Kapha* and *Meda*.

Using *Viruddha* and *Mithya Ahara*, an *Ayurvedic* text, we found that *Vihara* such as intake of milk with salty food items, milk with sour foods, and excess intake of fermented food substances, addiction to smoking, alcohol, and tobacco were found in the majority of patients diagnosed with *Yakritarbuda*. In certain cases of *Arbuda*, psychological factors were involved in the manifestation of the disease. Thus, *Dosha, Dhatu, and Mala* are the basic components of the body. As a result, it is absolutely necessary to make the body healthy and then sustain ageing for a longer period in the case of fatal and critical diseases like cancer. *Autophagy* has been noted as a tumour suppressor process in the liver, with higher *autophagy* levels found in chronic liver disease, cirrhosis, and HCC. *Autophagy* in the liver impairs both *inborn* and *accommodative immune responses*. Recent studies have linked HCC to a lack of *autophagy response*, and available evidence suggests that a lack of response in HCC could be related to either *impaired autophagy gene expression* or *altered autophagy signalling*. Future research will investigate whether an increased or decreased *autophagy response* is associated with the occurrence of HCC caused by liver cirrhosis. Besides that, because the likely reason for HCC defines the disease course and health status, the feasible therapeutic options available to patients are dependent on it. The demographic landscape has shifted as HCC treatment has improved. In this mini-review, we will briefly describe the traditional risk factors before focusing on fatty liver disease, an emerging etiological risk factor contributing to the rising incidences of HCC. "Akriyayam Dhruvo Mrityu Kriyayam Samshayah Bhaveta"

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