



AN EFFECTIVE HERBOMINERAL TREATMENT AS AN ADJUVANT THERAPY FOR THE IMPROVEMENT OF QUALITY OF LIFE OF HEPATOCELLULAR CARCINOMA (HCC) PATIENT: A CASE REPORT

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ABSTRACT

According to WHO reports Hepatocellular carcinoma remains an Asian health problem. Its prevalence disproportionately shares large of the world's nearly 78%. Treatment options of HCC are limited and the effectiveness of treatment varies due to development of therapy-related adverse effects in Allopathic medicine. We report herein a case of HCC admitted to Sir Sundarlal Hospital, Banaras Hindu University, Varanasi was treated with integrated Ayurvedic herbo – mineral medicine, with desirable results of improvement in QoL. The patient was treated with a holistic inter disciplinary approach i.e., Modern medicine treatment followed by Ayurveda, health education for cancer care and psychotherapeutic measures such as Yoga, psychological counseling etc. The symptoms were managed according to its clinical presentation and daily clinical evaluation. This paper demonstrates the findings of our experience in treating a case of HCC with Ayurvedic herbo mineral medicine as an adjuvant treatment for improvement of QoL. Moreover, it emphasized the needs to be explored Ayurvedic cancer management with more advance methodology.

Key Words: Ayurveda, Hepatocellular carcinoma, Herbo – mineral treatment, QoL

INTRODUCTION

Cancer is a worldwide major health problem and accounts for approximately one sixth of all deaths globally. But compared to other cancers, Hepatocellular Carcinoma (HCC) is quite a rare. It is the most common type of liver cancer. Asia has a disproportionately large share of the world's cases of cancer nearly 78% i.e. roughly 600 000. It is mainly because of the changes in lifestyle, diet, urbanization and increased life expectancy fuelling the increasing cancer prevalence amongst the Asian population. Therefore cancer is an increasingly important public health issue in Asian countries.¹⁻⁴

For management of cancer patients especially in Asian countries largely embraced with allopathic medicine. Depending on the stage of cancer, treatment modalities most commonly used are surgery, radiotherapy, and chemotherapy. However, the disadvantage of radiotherapy and chemotherapy are the development of therapy-related temporary and permanent adverse effects ranging from hair loss to lung or nerve damage. Also dry mouth, mouth sores, difficulty or pain in swallowing, nausea, vomiting, diarrhea, constipation, fatigue, bleeding and loss of appetite etc. are inevitable.^{5,6}

To overcome such adverse effects as well as for primary treatment, get continues support from a huge variety of traditional practices including Ayurveda, Siddha, Unani, Homeopathy and religious practices including spiritual therapy.

Ayurveda has held, and still holds an important role in primary health care management in Asian countries and is also appreciated in well-developed countries because of its remarkable traditional history more than 5000 year old. In present era it has been recognized as a popular complementary and alternative medicine in Western countries because Ayurveda uses drugs generally extracted from natural products without artificial additives which creates healing effects and incurs very few or no side effects.^{7,8}

Ayurveda theory is based on philosophical frameworks of nature. According to holistic viewpoint of Ayurveda, the human body is constantly interacting with the environment, hence combinatorial signs of disharmony in the external and internal environment of a person are considered in understanding, preventing, and treating diseases.^{9,10}

Ayurvedic medicine plays a key role in various elements of cancer care on a scientifically proven research background. Because of its unique diagnostics, Ayurveda can determine subtle disturbances in a very early stage of this disease. Then it can provide an important contribution to the successful treatment of cancer. And it also reduces the occurrence of adverse reactions which mention above and may offer cheaper and safer options for such strategies than current conventional medicine.^{7,11-13}

This systematic review focuses on the use of line of treatment of Ayurvedic herbo mineral treatment as an adjuvant therapy for assess the improvement of QoL of a Hepatocellular Carcinoma patient.

CASE REPORT:

A 62 year-old male patient presented with severe pain in abdomen and exertion after taking meal for more than 6 months, and weight loss, admitted to Male Kayachikitsa ward in Sir Sundarlal Hospital, Banaras Hindu University, Varanasi, India on April 18, 2011. He had complained of abdominal distention, incomplete evacuation of bowel, generalized weakness of the body and he was bed ridden most of the day. The pain had been present for 6 months and the other symptoms for 4 months. Both abdominal pain and loss of appetite had been getting progressively worse for the last 3 months prior to admission. Several days before his admission, he developed nausea and vomiting with above complains.

The patient's medical history was significant for Hepatocellular Carcinoma since 7 months. At the time of admission his blood pressure was within the normal range (112/68 mmHg) with 76/min. regular pulse rate. He was a non-smoker, non-drinker and not taking any prescribed

medications presently. Physical examination demonstrated a height of 168 cm and a body weight of 48 kg.

Inspection reveals he was emaciated and had enlarged lymph nodes in the abdominal, cervical, groin and axilla regions. On examination there was presence of moderate degree of icterus. But the symptoms such as pallor, clubbing, cyanosis and oedema were not observed.

Physical examination of the abdomen was significant for palpable, irregular inferior border, tender liver one finger breadth below the costal margin. There was no splenomegaly. Multiple enlarged lymph nodes are hard and non-tender. Generalized distension of the abdomen and in palpation shifting dullness and fluid thrill may suggestive of mild ascites. Systemic examination demonstrated no Central Nervous System, Cardio Vascular System, Respiratory System and Genitourinary abnormalities.

Laboratory evaluation included a complete blood count showing a white blood cell count of 7200/cu mm with a differential of 57% Polymorphonuclear leucocytes, 27% Lymphocytes, 1% Monocytes, 15% Eosinophils, and 0% Basophils. Hemoglobin was 11.3 g/dl and Red blood cell count 4.3 M/uL.

General blood picture smear shows predominantly normocytic, normochromic RBCs. Platelet are adequate and normal in morphology and no immature cells and hemoparasites are seen. Electrolytes were within normal limits. Blood Urea was 19.3 mg/dl and Creatinine 1.7 mg/dl. Liver enzymes such as Alanine transaminase (ALT) – 84 IU/L, Aspartate transaminase (AST) – 72 IU/L, Alkaline Phosphatase (ALP) – 167 IU/L and Total Bilirubin (TBIL) – 3.1 mg/dl, Direct Bilirubin – 1.9 mg/dl were marginally above normal limits. Albumin was slightly low at 3.1 g/dl. Fasting blood sugar level was within normal range. Hepatitis profile and HIV I & II were detected serologically negative.

A contrast enhanced abdominal CT scan was performed. It showed relatively defined lobulated heterodense minimally enhancing soft tissue mass lesion noted involving the right lobe of the liver. It signifies Hepatocellular Carcinoma with multiple satellite and metastatic nodules, peritoneal and abdominal wall deposits. And also it shows periportal, peripancratic and periaortic lymphadenopathy with mild ascites. The gallbladder and the pancreas were unremarkable. Spleen mildly enlarged in size and normal in echo pattern.

MATERIAL AND METHODOLOGY:

The QoL questionnaire was administered once before treatment and after the last administration of drugs. For this study, we used the WHOQOL – BREF; quality of life assessment questionnaire by World Health Organization in Geneva, which included QoL assessments and the baseline clinical characteristics of patient. In addition, to evaluate the responsiveness of QoL assessment to changes of the health status over time, data obtained during the course of treatment were also used.¹⁴

The therapeutic principles were used according to the fundamental theory of Ayurvedic treatment to emphasize health as the perfect state of physical, psychological, social and spiritual component of a human being. Disturbance of these components corrected mainly by two therapeutic processes i.e. Sodhana Chikitsa (Purificatory or Evacuatory process) and Shamana Chikitsa (Pacifying process).^{7,15-17} Sodhana Chikitsa, called as Panchakarma Chikitsa which eliminates vitiated Doshas, have been primarily used for medical management of cancer is unable to use for this patient due to his inferior physical and mental strength (Alpa Bala).^{7,15}

Shamana Chikitsa or palliative treatment which consists administration of rationally planned drug, diet, and lifestyle and keeps in view the Prakriti or nature of the patient and pacifies the components of his Vikriti or morbidity namely the pattern of vitiation of Doshas, Dhatus and the Agni etc. and gradually relieves the disease.^{7,15}

The approach of treatment has been categorized as

1. Dhatwagni Chikitsa (Correction of metabolic defects),
2. Prakritisthapani Chikitsa (Health maintenance),
3. Roganashani Chikitsa or Vyadhipratyanika Chikitsa (Specific anti-cancerous drugs),
4. Rasayana Prayoga (Rejuvenation of normal function including immune-modulation),
5. Naishthiki Chikitsa (Spiritual healing management) and
6. Lakshanika Chikitsa (Symptomatic management) which is beneficial for subside other symptoms and complications too.¹⁸⁻²⁰

The daily inspection of the general condition and complains if any were noted and accordingly Rejuvenate therapeutic management was planned basing on above categories.

The following herbs were prescribed based on the pharmacological (Ayurvedic) properties in the treatment:

- Nimba (*Azadirachta indica*) ki Gath (An overgrowth like tumor on the tree) (1 part)
- Guduchi (*Tinospora cordifolia*) (1 part)
- Sadabahara (*Vinca rosea*) (1 part)
- Apamarga (*Achyranthes aspera*) (1 part)
- Nagarmotha (*Cyperus rotundus*) (1 part)
- Shirisha (*Albizia lebbbeck*) (1 part)
- Tulasi (*Ocimum sanctum*) (1 part)

The decoction of above mentioned herbs was prepared, according to Ayurvedic authentic, and 60ml has been given in morning and evening before meal for four months.

The following Rasa Aushadies and Bhasmas were prescribed^{21,22,23}

- Hemabhakra - 75 mg,
- Tamra Sindoor - 100 mg
- Vanga Bhasma - 75 mg
- Vaikranta-mani Bhasma - 125 mg
- Pukhraj-mani Bhasma - 100 mg
- Manikya pisti - 100 mg

The above dose was given after mixing with honey in morning and evening after meal for 2 months.

- Pippali Naimittika Rasayana – Three powered fruits of Pippali (*Piper nigrum*) added to 120 ml cows' milk and 120 ml of water were put together and boiled and reduced to 120 ml. out of this 60ml was given one hour before a meal, two times a day; this was continued for 4 months.²⁴
- Syrup Tamalakyadi (A Patent Ayurvedic formulation), three table spoons given three times before meal for four months.

Health education to restore patient natural biorhythms (Prakriti sthapani Chikitsa) given by explaining food combinations and right timing of meals according to Ayurvedic philosophy. (Hitattama & Ahita tama Ahara, Ashtavidha Ahara Samskara, Nindra & Vega dharana, Sadvritta palana etc.)^{25,26,27}

The patient was advised to avoid the known carcinogens such as food preservatives, chemicals, chlorinated water as well as packaged and frozen foods etc. Guided to choose fresh, local, organically produced foods, whole foods and natural foods is a step in the right direction.

Advised to drink adequate amount of boiled water which helps to flush out toxins and prevent further deposits, and corrects constipation when taken according to thirst.^{26,27} To manage the weakness it is advised to reduce excessive physical activities. To restore body, mind, emotion and rejuvenates itself, and insight increases, directed to follow simple Yoga Asanas such as Shavasana and Nadishodhana Pranayama etc.^{28,29}

RESULTS AND OBSERVATION:

In the perspective of Ayurveda medicine, abnormal growths are classified basing on type and location. Granthi, Arbuda, Vridhi, Asthila, Valmika, Shaluka are some of the words which were used for cancer. Thus, names assigned refer to neoplasms found within particular organs or body tissues.

Ayurvedic treatment can perhaps helpful for prophylactic, palliative, curative and supportive treatment of cancer,

including breast, lung, and GIT cancer etc. It can be used as an adjuvant or a co-therapy along with chemotherapy or radiotherapy and even for post-surgery care. The pain and other complications of cancer and adverse side effects of its treatment can be ameliorated by making use of Ayurvedic therapeutics.

After 2-3 days of the above treatment the symptoms nausea and vomiting has subsided eternally. Appetite increased gradually and the patient used to take normal diet. Stool passed two to three times per day in normal manner and distention of the abdomen also reduced within two weeks.

Two months later, the patient has remained free of most of above complained symptoms such as pain in the abdomen, generalized weakness etc.

Obtained data were analyzed according to WHOQOL – BREF index. And obtain results shown in the Table No.1

Table No.1: RAW SCORES & TRANSFORMED SCORES FOR BEFORE & AFTER TREATMENT IN EACH DOMAIN

Domain	Facets incorporated within domains	Raw Scores		Transformed Scores			
		BT	AT	4 – 20		0 – 100	
				BT	AT	BT	AT
1. Physical health	Activities of daily living Dependence on medicinal substances and medical aids Energy and fatigue Mobility Pain and discomfort Sleep and rest Work Capacity	8	18	5	10	6	38
2. Psychological	Bodily image and appearance Negative feelings Positive feelings Self-esteem Spirituality / Religion / Personal beliefs Thinking, learning, memory and concentration	7	14	5	9	6	31
3. Social relationships	Personal relationships Social support Sexual activity	7	8	9	11	31	44
4. Environment	Financial resources Freedom, physical safety and security Health and social care: accessibility and quality Home environment Opportunities for acquiring new information and skills Participation in and opportunities for recreation / leisure activities Physical environment (pollution / noise / traffic / climate)Transport	18	23	9	12	31	50

The first domain with 8 raw value before treatment, emerged as a significant factor with 18 raw value after treatment. Its' transformed values of 4-20 and 0-100 before treatment and after treatment are 5,10 and 6, 38 respectively. As the items in this Physical domain include Activities of daily living, Dependence on medicinal substances and medical aids, Energy and fatigue, Mobility, Pain and discomfort, Sleep and rest and Work Capacity are significantly improved.

The second domain had 6 items which gives 7 and 14 raw value for before treatment and after treatment. Transformed values of items of second domains showed 5 and 9 for before treatment and after treatment in 4-20 score and 6 and 31 for before treatment and after treatment in 0-100 score. It measured the psychological aspects such as Bodily image and appearance, Negative feelings, Positive feelings, Self-esteem, Spirituality / Religion / Personal beliefs, thinking, learning, memory and concentration. This factor was therefore named as "Psychological Domain".

The third domain contributed Social relationships and its' three items measured Personal relationships, Social support, Sexual activity with 7 and 8 raw value for before treatment and after treatment. Its' transformed values of 4-20 and 0-

100 before treatment and after treatment are 9, 11 and 31, 44 respectively interference in everyday functioning, comfort in attending social functions etc.

The fourth domain with 18 and 23 before treatment and after treatment raw values emerged as a significant domain with eight items named as "Environment domain". This factor contributed a variance of 4.7%. The items in this factor were loaded ranging from 9 -12 and 31 – 50 transformed values of 4-20 and 0-100 before treatment and after treatment respectively. The common variance indicates that the items are sharing common characteristics. All these items such as Financial resources, Freedom, physical safety and security, Health and social care: accessibility and quality, Home environment, Opportunities for acquiring new information and skills, Participation in and opportunities for recreation / leisure activities, Physical environment (pollution / noise / traffic / climate), Transport measured an individual's satisfactory relationship with family members, ability to interact freely, and share and access support from the family outer environment. These items imply the harmony of relationships and also the adjustment of the individual with the family and surroundings.

DISCUSSION

Hepato Cellular Carcinoma accounts for most liver cancers. It occurs more often in men than women at ages 50 – 60 yrs. and its impact will be seen mostly in developing countries. More than 80% of Hepato Cellular Carcinoma patients' prognosis is poor due to late presentation with large tumor and also the lack of medical expertise and facilities.^{1,3}

The mechanism of Hepato Cellular Carcinoma is very complex and in particular, chronic infections of hepatitis B and/or C and the toxin from certain *Aspergillus* species of fungus can aid the development of carcinoma, by repeatedly causing the body's own immune system to attack the liver cells. It develops the mutation of the cellular machinery that causes the cell to replicate at a higher rate and results in the cell avoiding apoptosis.^{1,2,3}

The pathophysiological changes may present with jaundice, bloating from ascites, easy bruising from blood clotting abnormalities, loss of appetite, unintentional weight loss, and abdominal pain especially in the upper -right part, nausea, emesis, or fatigue.

In the present study, we evaluated the reliability and validity of the QoL in patient with Hepato Cellular Carcinoma who advised in Ayurvedic therapeutic regime. Based on the results of statistical analysis and clinical judgment, we can make clear that the QoL of Hepato Cellular Carcinoma patient was more upgraded. The significant improvement of the four domains and these clinical variables are clinically reasonable and demonstrate the clinical validity of the Ayurvedic treatment.

Among several potential benefits of Ayurvedic medicine, relief from Symptoms is especially valuable. Ayurvedic herbs used in cancer therapy results not only in relief from symptoms, but also reduce the side effects and cancer associated complications. Each herbal product contains multiple active compounds that may operate synergistically, producing therapeutic benefits and lowering the risks on adverse effects.

A regimen consisting of Ayurvedic medicine is, Dhatwagni Chikitsa (correction of metabolic defects), Prakritisthapani Chikitsa (health maintenance), Roganashani Chikitsa or Vyadhi Pratyani Chikitsa (Disease specific drugs), Rasayana Prayoga (Rejuvenation of normal function including micro nutrition and immuno-modulation), Naishthiki Chikitsa (Spiritual healing management) and Lakshanika Chikitsa (symptomatic management) for subsides the diseases condition as well as improve quality of life.

The patient was treated with a multi-disciplinary holistic approach i.e., administration of Ayurvedic medicines along with Modern chemotherapy, education for disease condition, and psychological counseling.

The superiority of integrated Ayurveda medicine and Western medicine for hepatocellular carcinoma is undeniable. Chemotherapy played a crucial role in controlling carcinoma, while Ayurveda medicine played an equivalent role in improving the symptoms, minimize the side effects of chemotherapy, maintaining the healthy internal environment such as micro nutrition and micro circulation, regulating the immune system, and improving quality of life (Prakriti sthapani).

This line of treatment has been shown improvement in appetite, food intake, feeling of well-being which could elicit bodyweight gain and reduction in malnutrition, fatigue etc. These herbo-minerals might stimulate the flow of digestive juices, thereby improving digestion and increasing the appetite.

Vomiting and loss of appetite got reduce in early phase. Initially he has given liquid food and gradually allowed from liquid to solids.

According to Ayurvedic principle Ama and Agni are the causative factor for most of the diseases. Therefore Ama pachana or Dhatwagni Chikitsa aided to improve above complains of vomiting, loss of appetite and constipation.

Given Ayurvedic herbo minerals have a positive effect on Vyadhi pratyani chikitsa meaning specific anti-cancerous drugs and also proven to be powerful immune-stimulants, which could increase body resistance power during cancer associated immune suppression. Ayurvedic anti-cancer therapy includes recommendations for lifestyle and use of specific foods and herbs which are very helpful not only in preventing the progression of the disease but also makes the patients feel better and comfortable overcoming the symptoms. As it contains purified metallic and mineral components (Rasa Oushada), the dosage must be established with caution according to the requirement of patient. These anti-cancerous and immune-stimulant agents were given to the patient throughout the treatment in order to control his disease and relief symptoms. It gradually subsided the abdominal pain, vomiting and increases appetite.

As mentioned in Ayurvedic classic 'Charaka Samhita', Pippalee Naimittika Rasayana was especially given in the condition of Jalodara i.e. Ascites. After treatment of three weeks, ascites condition was permanently subsided and patient did not complain about the abdominal distention.

Internal Ayurvedic therapy requires different strategies according to different phases of the cancer, pathophysiology, symptoms and the complications. Therefore, to correct liver functions 15ml syrup Tamalkyadi, three times before meal was prescribed. It works as a Shamana Chikitsa which regulates Doshas, and also as a Rasayana Chikitsa which act as an immunotherapy and Dhatwagni Chikitsa for correction of metabolic function of the liver.

The present case study has been found to bring about a new significant advancement for the clinical management of Hepato Cellular Carcinoma with a relatively simple but effective and safe combination of herbo-mineral drugs. Based on the findings of the study it can be predicted that it is a relatively safer, cheaper and effective adjuvant therapy for the management of Hepato Cellular Carcinoma. Thus it is recommended for clinical application and also it should be fill-up the knowledge gaps that exists in Ayurvedic Medicine with special reference to Hepato Cellular Carcinoma in future by further studies.

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