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EFFECT OF KALMEGHA ON HEPATIC BIOMARKERS IN VIRAL HEPATITIS

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Abstract: The liver carries out thousands of biochemical functions, most of which cannot be easily measured by blood tests. Laboratory tests measure only a limited number of these functions. In fact, many tests, such as the amino transferases or alkaline phosphatase, do not measure liver function at all. Rather, they detect liver cell damage or interference with bile flow. The word hepatitis simply means an inflammation of the liver without pinpointing a specific cause. Someone with hepatitis may have one of several disorders, including viral or bacterial infection of the liver have a liver injury caused by a toxin (poison) have liver damage caused by interruption of the organ's normal blood supply by experiencing an attack by his or her own immune system through an autoimmune disorder have experienced trauma to the abdomen in the area of the liver.

Keywords: Viral hepatitis, Hepatic biomarker, Kalmegha

Introduction: Ayurveda is a science of life. The main aim of Ayurveda is to prevent the health of people and treat the diseases which suffer the people. This aim described in all main ayurvedic texts like charaka, sushruta etc. (Cha.chi.30/26). Hepatitis simply denotes inflammation of liver, which can be caused by viral infection, non viral infection, drugs, toxins, alcohol, any metabolic disease and ischaemia. Infective Viral hepatitis is one of the chief culprits of Liver related morbidity and mortality^[1]. It is emerging as a tough challenge in the series of global health problems. It is so because of central role of liver in synthesis, metabolic and excretory function of the bodily biofunctioning^[2]. In Ayurveda, Purificatory Methods (Samsodana) and Internal Medicine (Samsamana) are the modes of treatment indicated for the complete eradication of doshas and eliminate the disease.

Samsamana therapy is mainly depend on the tikta rasa dravya. Tikta is the best rasa among all the pitta pacifying rasas. Tikta rasa have deepan pachan guna, which convert sama-pitta to nirama- pitta. It has rakta and mamsa sthirikarana guna, so play very important role in the samprapti vighatana of the kamala disease. Kalmegha is tikta rasa dravya, so can be used in the treatment of kamala. Kalmegh has

antioxident property, which is important in remodeling of liver parenchyma.^[3]

Pharmacological Action a/c to Ayurveda : Dipana, Pachana, Krimihara Rechana, Sothahara, Jvarahara, Pittahara, Pitta Rechaka, Yakrit Uttejaka, Rakta Shodhaka, Kaphapitta Shamaka, Sroto Shodhaka and Rasayana^[4].

Pharmacological Action a/c to Modern Science: Purgative, Laxative, Anti helmenthic, Immunomodulatory activity, Anti-tumour activity, Adaptogenic, Hepatoprotective, Hepatoregenerative, Choloretic, Hypoglycemic, Hypolipidemic, Anti-inflammatory, Antispasmodic, Antiviral^[5], Antioxidant.

Materials and Methods

The patients were selected for this trial after fulfilment of diagnostic criteria of disease Kamala. Patient were thoroughly examined and questioned on both subjective and objective parameter. Ethical clearance and informed concerned was obtained before conducting the clinical trial.

Selection of Drug: The word dravya is derived from the dhatu "dru-gatou" which means the one known by rasa, guna etc. (druyate, gamyate, gnyate rasadibhi iti Dravyam). Kalmegha is well known medicine for hepatoprotection and has antioxidant property. Being tikta rasa drug it

has additional Aampachana, Raktashodhaka, Pittarechaka property.

Dose: Drug is used in dry powder form (dry leaves) 3gm twice a day with honey.

Selection of Cases: A series of 30 diagnosed, uncomplicated cases of Acute Viral Hepatitis have been registered from the O.P.D. and I.P.D of Kayachikitsa, Sir Sunderlal Hospital, Banaras Hindu University, Varanasi. The study was approved by "The Ethical Committee" of Institute of Medical Sciences, Banaras Hindu University, in which patient completed 3 month follow up 1 month interval. The case selection was regardless of sex, occupation, socioeconomic status and others conditions. Both acute and chronic cases of hepatitis were taken.

Inclusion Criteria

1. Aged between 15-60 yrs.
2. Symptomatic newly diagnosed cases of Acute viral hepatitis.
3. Patient willing to participate in the above trial and giving informed consent

Exclusion Criteria

1. Viral hepatitis associated with other systemic complications or associated diseases like DM, HTN, Asthma, CHF, Tuberculosis and AIDS.
2. Viral hepatitis complicated with Gross swelling of the limbs, Ascites, Portal Hypertension, Esophageal Varices, Bleeding disorders and Hepato-renal syndrome.
3. Patients with a Prothrombin time > 18 seconds, and INR > 2.
4. Patients with S. Albumin level < 3.5 mg/dl.
5. Pregnant and lactating women.
6. Patient undergoing other Panchakarma procedures.
7. Patients who took any other medication or discontinue the trial period without information of the investigator.

Statistical Methods: Qualitative variables were assessed by Chi-square (χ^2) for significant difference between the groups. "Friedman Test"

Table-1: Effect of therapy on hepatic biomarkers

Group	Mean \pm SD BT	Mean \pm SD AT	Within The Group Comparison Paired T Test BT-F2
S.Bilirubin	7.1 \pm 2.30	3.7 \pm 1.43	3.39 \pm 1.10 t=15.36 p<.001
SGOT/AST	7.1 \pm 2.30	3.7 \pm 1.43	291.80 \pm 237.33 t=6.14 p<.001
SGPT/ALT	641.88 \pm 235.58	452.00 \pm 183.076	189.80 \pm 112.46 t=8.44 p<.001
S.Protein	7.75 \pm .52	7.82 \pm .57	1.3 \pm .40 t=1.4 p>.05
S.Albumin	4.82 \pm .47	4.80 \pm .43	0.08 \pm 0.49 t=0.65 p>.05

was used to find out difference within the groups. To assess the effect of drug from base line to different follow ups in Quantitative variables Paired 'T'-test was applied. To assess the effect of drugs from the base line to different follow ups in qualitative variables increment in asymptomatic plus mild cases were undertaken.

Techniques to be Employed: CBC, Blood Sugar, RFT, LFT, Lipid Profile, Hepatitis Viral markers with HBsAg, HBeAg, Anti-HBe, Anti HBe-IgM/IgG, auto immune liver profile, USG abdomen.

Assessment of Treatment Outcome: The treatment outcome was graded into Complete Remission, Mild, Moderate, Marked and Unchanged depending on the percentage remission of Symptoms and Signs and Changes in the Liver Function Tests.

1. **Complete Remission:** 100% relief in symptoms and signs and objective parameters with no recurrence in during follow up study.
2. **Marked Improvement:** 75-100% relief in symptoms and signs and objective parameters.
3. **Moderate Improvement:** 50-75% relief in symptoms and signs and objective parameters.
4. **Mild Improvement:** 25-50% relief in symptoms and signs and objective parameters.
5. **Unchanged:** Less than 25 relief in symptoms and signs and objective parameters.

Results

Selected patient were allowed to take the drug as advised. Assessment was done on the subjective and objective parameter. Significant changes were observed which are shown in the table, however no change was observed in routine blood examination.

Discussion

As shown in the observation table-1 there was significant improvement in symptoms. It was clinically as well as statistically. Thus Kalmegha churna was proved effective in management in Kamala (Hepatitis).

Conclusion: Drug, kalmegha has beneficial effect on acute Hepatitis, has Tikta rasa which has Deepan, Pachana, Pittahara, Rakta-Mamsa sthirikarana and Vishaghana guna, has also Rasayana and Balya action.^[4,6]

No abnormality observed in LFT and RFT of selected cases who has taken the treatment and so we can say that our drug is safe for Kamla patient.

I wish, the present study will encourage and design new pathways for further research in the field of Hepatology. This is only a preliminary study conducted as a part of education research programme.

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