



Contents lists available at ScienceDirect

Journal of Traditional and Complementary Medicine

journal homepage: <http://www.elsevier.com/locate/jtcme>

Original article

Implications of traditional medicine in the treatment of Hepatitis A in Kerala

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ARTICLE INFO

Article history:

Received 12 August 2015

Received in revised form

22 January 2016

Accepted 26 January 2016

Available online 9 March 2016

Keywords:

Traditional medicine

Hepatitis A

Ayurveda

Kerala

Homeopathy

ABSTRACT

Introduction: The recent outbreaks of Hepatitis A in Kerala are suggestive of decrease in endemicity as most adults were not exposed during the childhood. In allopathic system of medicine, there is no established treatment for Hepatitis A and hence most people tend to rely on the alternate systems of medicine. The study was aimed at identifying the burden of Hepatitis A in the locality and to uncover the degree of dependence of the people on traditional systems of medicine.

Methods: The study spanned over 7 months and was conducted in Malappuram district of Kerala. A simple questionnaire having closed-ended questions was prepared and circulated among the physicians in the area. Demographic and other relevant details were obtained from the patients and the medicine system relied on was scrutinized.

Results: Of the 348 patients enrolled, majority of the patients were between the age of 10–30 years. The study revealed that females were more affected than males. Similarly people in rural areas were greater than those from urban areas. Most patients (73.28%) relied on Ayurvedic treatment after one week of onset of symptoms.

Discussion and conclusion: The preparations such as triphala which has great efficacy in treatment has to be further studied to establish the pathways and mechanism through which it acts. A collaborative effort between government, modern medicine and alternate medicine system can be highly effective in reducing the outbreaks of such epidemics through proper preventive and therapeutic strategies.

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1. Introduction

Hepatitis is a systemic viral infection that predominantly affects the liver and is classified into five types on the basis of the causative virus. Among them, Hepatitis A is the most common form caused by Hepatitis A virus (HAV) and is mainly prevalent in developing and under-developed nations where there are improper sanitation facilities. Though it is considered to be self-limiting, the reduction in the quality of life during the infectious stage can lead to inability to work or attend educational institutions and thus has major social

and economic impact. It can be either epidemic or sporadic in nature and is estimated to affect over 1.5 million cases every year.¹

Though acute hepatitis is generally due to HAV in paediatrics and Hepatitis E virus (HEV) in adults, the recent epidemiological studies have shown an increase in HAV cases in the adult population as well.² The symptoms of the disease are non-specific in nature and involve fever, malaise, right quadrant pain, nausea, headache, vomiting, jaundice and pale stools.

It is usually spread through the faecal–oral route due to the contamination of the eatables or drinkables with faecal material. Though remission can occur within few weeks after onset of symptoms, in most cases it takes greater than eight weeks to subside. Though it is prevalent in the third-world countries, it has still caused major outbreaks in developed countries like USA where, an outbreak was catapulted by contaminated green onions at a restaurant in Pennsylvania. The outbreak affected 640 people and

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Peer review under responsibility of The Center for Food and Biomolecules, National Taiwan University.

culminated in the death of four.³ Another incidence involved recall of frozen pomegranates sold by US retailer Costco in USA which lead to 118 people developing Hepatitis A.⁴ India used to be a hyper-endemic region for Hepatitis A with infection rates being provocatively high in the younger age groups. But this scenario has changed into moderate-endemicity with the rate declining in children. However, the current scenario has shown an increase in the adult population contracted with the disease which is a thing of grave concern with the low per capita income existing in India.⁵

Kerala is geographically located in the south-western corner of India and has high literacy rate and very good health indices as compared to other Indian states. The achievement of these feats has been possible even though the per capita income of the low. These two contrasting features have resulted in christening this unique type of developmental model as “Kerala Model of development”.⁶ However the recent outbreaks are suggestive of the decrease in endemicity in Kerala as most of the adults were not exposed in their childhood and hence even a mild contamination of water has led to epidemic outbreaks. The major epidemics included 399 cases being reported in 1998 in central Kerala and the outbreak in Kottayam in 2004 when sewage treatment water got mixed with canal water. Few years back, another outbreak occurred in Kollam district of Kerala. The 2014 health survey in Kerala detected 2831 patients who were infected and 6 dead with HAV.^{7–9} Of these 752 (26.6%) infections and 2 (33.3%) deaths were reported from Malappuram district alone which shows the high prevalence of the disease in the district.

In allopathic system of medicine, there is no established treatment for Hepatitis A and WHO recommends that no therapy needs to be provided and the patient is to be advised to maintain nutritional balance. The patients are also abstained from using alcohol during the same period. Although there is general belief of avoiding fatty meals while infected, WHO recommends the use of egg, milk and butter so as to help provide an adequate caloric intake.

India has one of the oldest and richest cultural traditions in which indigenous systems of medicines developed. This heritage is still live in countryside where people tend to rely on traditional medicine to alleviate their conditions, especially in cases such as hepatitis, chikungunya and dengue fever which are common epidemic outbreaks in the region. Majority of Indians are dependent on the traditional systems of medicine as it is feasible economically and the fear of side effects is less. WHO has acknowledged the relevance of traditional medicines in developing countries and that it has an important role in providing services to a very large fraction living in rural areas. From the early 90s, Indian Council of Medical Research (ICMR) has set up an unique network country-wide for carrying out controlled clinical trials for herbal medicines. Using this network, the council has demonstrated the efficacy of several traditional medicines including *Picrohiza kurroa*, *Arogyawardhini*, *Tinospora cordifolia* and *Phyllanthus amarus* in the treatment of viral hepatitis.^{10–13}

The study was aimed at identifying the burden of Hepatitis A in the locality and to uncover the degree of dependence of the people on traditional systems of medicine.

2. Materials and methods

2.1. Study area and population

The study was conducted in Malappuram district of Kerala. The district has a dominance of Muslim population and is the most populated district in the state of Kerala as per Census 2011. The selection of district was based on the reports of Integrated Disease Surveillance Unit which emphasised the prevalence of Hepatitis A in Malappuram as compared to other districts. The fact that KIMS Al

Shifa Pvt Ltd, the main site of study was located in the location also supplemented the same.

2.2. Study period

The study was conducted over a period of 7 months from October 2014 to May 2015.

2.3. Study design

The cross-sectional descriptive study was performed to analyse the disease burden on the different economic groups in the region who relied on private hospitals, government establishments and traditional medical facilities in the locality. Prior to the commencement of the study, oral consent was obtained from the health care institutions and patients participating in the study.

With Kerala having deep roots in the traditional and alternative forms of medicine, the study initially attempted at evaluating the comprehension of allopathic doctors on the treatments used in other systems of medicine. A structured questionnaire was developed for this purpose by taking guidance from previous literatures and incorporating modifications as per the study objectives.^{14,15} The physicians were asked to fill in the questionnaire as may seem appropriate and were asked to refrain from the need to identify themselves on the sheets provided. The questionnaire also helped in developing a general consensus on the diagnosis of Hepatitis A.

The diagnosis of hepatitis was ascertained on the basis of common consensus developed through the physician questionnaire. The patients were screened with the help of ASHA (accredited social health activists) workers in the locality. Patients who gave verbal consent to participate in the study were included and the remaining was excluded.

The data collected from patients included name, age, sex, date of onset of symptoms, health care institution relied on initially, economic status, type of occupation and system of medicine depended upon currently. A verbal survey was also conducted among the patients regarding the compliance to different treatment practices and the perceived efficacies. The data collection form as well as the questionnaire for physicians was validated internally.

2.4. Data analysis

The collected raw data was entered into Microsoft excel 2010 for windows and descriptive statistics was applied to obtain the results.

3. Results

A total number of 362 patients were approached of whom, 348 consented to participate and was enrolled in the study. Of the total sample, 63.51% (221) were females and the remaining were males. The difference was found to be extremely significant using one-sample binomial test with $p < 0.0001$. The mean age of the study sample was found to be 39 years (Range: 6–71 years; S.D = 7.4 years). The majority of the patients were between the age group of 10–30 years (Fig. 1). Of these patients 78.74% (274) belonged to the below poverty level (BPL) class as compared to remaining 21.26% (74) who fell under the above poverty level (APL) division. The patients were stratified on the basis of locality in which they reside and it was observed that 83.9% (292) patients lived in rural areas where they mainly depended on wells for their household activities and public ponds were relied on for washing and bathing by the male population. Among the patients, the major source of water relied on for daily activities was wells or bore-wells or tanker-

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