

Pharmaceutical Investigation of Caripill Use by Certified Medical Practitioners in an Urban Health Setting for Dengue Patients

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Abstract

Aim: Pharmacoepidemiological study of the usage of caripill for the dengue patients in an urban health setup among the registered medical practitioners. **Methods:** The observational study was conducted in the Department of Pharmacology, Darbhanga Medical College, Laheriasarai, Darbhanga, Bihar, India from January 2020 to October 2020. The data collected from the registered medical practitioners who are doing their general practice in Darbhanga. For this study, the data of the dengue patient found positive, and the treatment modalities were collected. **Results:** In our study based on the proved efficacy of carica papaya leaf extract, the prescription pattern and usage of the drugs were common among many practitioners. It is evident from the below table 1 that around 7 out of 10 clinics have prescribed caripill tablet than the conventional pain killer regimen. The tablet was given for a period of five days, and they recovered after week duration. **Conclusion:** From this study it is evident that the tablet caripill is very much popular for its efficacy and hence many practitioners are prescribing caripill in dengue fever patients to prevent the progression of the disease to the next level of dengue haemorrhagic fever.

Keywords: Dengue, Fever, Caripill

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Introduction

Dengue is an acute viral infection associated with thrombocytopenia, which is of great public health concern in India. Dengue fever (DF) is a severe, flu-like illness that affects all age groups including infants, young children, and adults. DF is caused by flavivirus transmitted mainly by

Aedes aegypti and also by *Aedes albopictus* mosquitoes[1]. In India, *A. aegypti* is the main vector in most urban areas; however, *A. albopictus* is also implicated in many states. Characteristic manifestations of DF are continuous high fever, headache, retro-orbital pain, myalgia, arthralgia,

hemorrhagic tendency in the form of petechiae or epistaxis, thrombocytopenia, and increase in hematocrit values[1-3]. After the incubation period of 4–10 days, there is a rapid onset of symptoms and typically there are three phases in DF: febrile phase, critical phase, and recovery phase.

Dengue is one of the rapidly spreading mosquito-borne viral diseases worldwide. It is a major public health concern throughout the tropical and subtropical regions of the world. In the present decade, the incidence has increased in both urban and rural settings. WHO estimates that there may be 50–100 million dengue infections and half a million dengue hemorrhagic fever (DHF) worldwide every year, with an average case fatality rate of around 5%[4,5]. A total of 3.6 billion people is at the risk of infection across 120 dengue-endemic countries. More than 70% of those at risk live in the Asia Pacific region, making this region an epicenter of dengue activity[6]. Increasing burden of dengue has been a matter of serious concern worldwide. Dengue is widespread in India, and outbursts occur every year. The first epidemic of clinical dengue-like fever was recorded in Vellore of Tamil Nadu, and the first virologically proved epidemic of DF occurred in Kolkata and Eastern Coast of India in 1963–1964[1,7-9]. Most of the cases are being reported in the monsoon and post- monsoon seasons[1,10]. The first major widespread epidemics of DHF/dengue shock Syndrome(DSS) occurred in India in 1996, involving areas around Lucknow and Delhi and then it spread to all over the country[1]. DF diagnosis is done by detecting anti-DV IgM antibodies or by NS-1 antigen in patients' serum depending upon day of illness[11]. A single tube nested PCR is used for detection and serotyping of dengue virus[12]. Dengue virus isolation in tissue culture cells and its sequencing are also being carried out for research purpose[13]. There is no specific treatment for dengue; early detection and intensive supportive care are

the most essential aspects of management. Thrombocytopenia usually occurs in the critical phase, and if left unattended or untreated it can lead to increased morbidity and mortality. As of now, there is no approved vaccine or allopathic medicine for the definitive management of DF. Few anecdotal reports have highlighted the ayurvedic or herbal preparations for treating thrombocytopenia in patients with dengue.

Material and methods

The observational study was conducted in the Department of Pharmacology, Darbhanga Medical College, Laheriasarai, Darbhanga, Bihar, India from January 2020 to October 2020, after taking the approval of the protocol review committee and institutional ethics committee. The data collected from the registered medical practitioners who were doing their general practice in Darbhanga. For this study, the data of the dengue patient who were found positive and the treatment modalities were collected. Most of the doctors were full time general practitioners with an outpatient clinic setup. The records of the patients include their age, sex, clinical signs and symptoms, the investigations done for evaluating dengue infection (NS1 positive), platelet count and complete hemogram. Those patients whose platelets were normal were categorized under dengue fever and those patients whose platelets fall below 50000/ μ l of blood were put under dengue hemorrhagic fever.

Inclusion and exclusion criteria

Here the inclusion criteria consisted of patients in the age group of 20 to 55 years, both male and female, NS1 positive, dengue fever (i.e., platelet count normal).

Exclusion criteria includes patients less than 20 years of age & more than 55 years of age, with other co morbid conditions like renal or hepatic failure, pregnancy, hematological disorders like hemophilia, idiopathic thrombocytopenia. So, the prescription pattern for those patients

identified with dengue fever alone was evaluated.

Data collection and analysis

The data was collected from 10 outpatient clinics in Darbhanga. All the doctors running the clinic were registered medical practitioners. The data included in the order given to the clinic in a digital format, number of patients with NS1 positivity and normal blood platelet counts and the prescription pattern which included pain killers like only acetaminophen in some patients and those with add on therapy of caripill with the dosage were recorded. The dosage of caripill is 1100mg thrice a day for five days. This is the drug manufactured by microlabs India.

Statistical analysis:

The data given above in the tabular column are analysed statistically. The figure 1 shows the pattern of each clinic showing their prescription pattern with and without caripill.

Results

In our study, based on the proven efficacy of carica papaya leaf extract, the prescription pattern and usage of the drugs were common among many practitioners. It is evident from the below table 1 that around 7 out of 10 clinics have prescribed caripill tablet than the conventional pain killer regimen. The tablet was given for a period of five days, and they recovered after a week duration.

Table 1: Number of dengue fever patients in different clinic where prescribed caripill tablet than the conventional pain killer regimen

Clinic with a digital number	Number of dengue fever patients (as per inclusion criteria)	Prescription pattern	
		Conventional pain killers only	Painkillers + caripill tablet
Clinic 1	33	10	23
Clinic 2	10	6	6
Clinic 3	40	15	25
Clinic 4	30	10	20
Clinic 5	55	45	10
Clinic 6	20	12	8
Clinic 7	40	25	15
Clinic 8	27	11	26
Clinic 9	50	23	27
Clinic 10	32	15	17

Discussion

Currently there is no specific treatment for DENV, recent hopeful vaccine candidates have just been deemed ineffective[10], and there is no prediction of complete vector control. However, rapid diagnosis followed by targeted vector control efforts decrease DENV transmission, and early detection followed by supportive care is reported to potentially decrease mortality rates from 5-20% to less than 1%[11].

There is no specific treatment for dengue; intensive supportive care is the most important aspect of management. The

thrombocytopenia which usually happens in the defervescence stage of the illness is the critical phase, and if left unattended or untreated it can lead to mortality. Till now there is no approved vaccine or drug against dengue virus, therefore there is an urgent need of development of alternative solutions for dengue. Several plants species have been reported with anti-dengue activity. Recently, the use of alternative medicine and the consumption of plant materials have increased in many countries in the world, mostly because plant-derived drugs and herbal formulation are commonly considered to be less toxic and less side effects than the synthetic ones.

Thrombocytopenia is often characterized by bruising, purpura in forearms, pinpoint haemorrhage's, epistaxis, and bleeding gums. Important causes of thrombocytopenia in DF are bone marrow suppression in early stage, disseminated intravascular coagulation, peripheral sequestration of platelets, destruction of platelets (antiplatelet antibodies). Severe thrombocytopenia is associated with complications such as DHF and DSS, and if untreated leads to morbidity and mortality[12].

Caripill syrup may have positive impact on RBC and WBC counts in pediatric subjects with DF based on the study results. Caripill syrup was well tolerated by all the patients.

Conclusion

From this study it is evident that the tablet caripill is very much popular for its efficacy and hence many practitioners were prescribing caripill in dengue fever patients to prevent the progression of the disease to the next level of dengue haemorrhagic fever. This avoids the unwanted inpatient admission of the patients. An addition of a drug improves the platelet count and thereby prevents hospitalization.

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