Pharmacoepidemiological study of the usage of caripill for the dengue patients in an urban health setup among the registered medical practitioners

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Abstract
Dengue is a prevailing infectious disease in India currently associated with high mortality and morbidity. It is a viral disease without any specific treatment or specific drug availability. Some reports show that carica papaya leaves extract are said to improve the platelet count among dengue patients: but to support this, the prescription pattern and its common usage among the registered medical practitioners are not available.

Objectives: This study is to evaluate the pharmaco epidemiology of the use of caripill among the registered medical practitioners in an urban population, Chennai. By knowing this, the popularity of the drug and its usage in the market can be evaluated.

Keywords: Caripill, Dengue, Pharmacoepidemiology.

Introduction
Dengue is an acute infectious disease caused by mosquito and associated with significant mortality and morbidity.[1] Today about 50% of the world's population, live in areas which are endemic for dengue transmission, and around 125 countries are endemic for the same.[2] Globally, around 50–200 million dengue infection, 500,000 episodes of severe dengue, and 20,000 dengue-related deaths are reported annually.[3] The incidence and prevalence of dengue infection are expected to increase in future because of changes in climate, travel, socioeconomic status, trade, and viral characteristics.[3] There is 40% risk of contracting dengue if one resides in the endemic area and out of these, only 0.5% has risk of developing a serious form of the disease. Clinically, dengue causes moderately high-grade fever, rash with severe aches, mostly severe backache, and pain behind the eyes. Following this, there is an apparent phase of improvement and in severe forms symptoms such as vomiting, pain in the abdomen, red spots, reduction in urine output, change in alertness, and bleeding can occur. The red flag sign, citing the severity in serious dengue is a fluid leak from blood vessels and capillaries from the nose, gums, skin, lung vessels, intra-abdominal areas, etc.[4]

Bleeding of variable severity is seen mainly in the severe form of dengue, i.e., dengue hemorrhagic fever. Pathogenesis of bleeding involves leakage of plasma from the blood vessels. It seems to be due to the destruction of platelets through complement system or depression of bone marrow due to dengue viral infection or both. It is also observed that platelets that escape from the destruction become nonfunctional or less functional.[5,6,7] Direct correlation between platelet count and prognosis of dengue is reported in many published studies.[5,6,8-10]

With the recent outbreak of dengue in India, there has reportedly been a sudden increase in the demand for papaya leaves juice across India. The print media, social network, and national media have started coming up with opinion pieces, news items, and blogs on the use of papaya in the treatment of dengue which was instantly taken up by the community due to its perceived beneficial effect on the platelet count.[11] Literature cites the therapeutic effects of aqueous extract of papaya (*Carica papaya*) leaves that are presumed to be due to several active components (flavonoids, alkaloids, enzymes, and minerals) which may have antioxidant and immunomodulatory effects.[12-15]

Table 1:

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	35	11	24
Clinic 2	12	7	5
Clinic 3	43	16	27

Clinic 4	28	8	20
Clinic 5	54	41	13
Clinic 6	18	11	7
Clinic 7	42	27	15
Clinic 8	39	12	27
Clinic 9	56	26	30
Clinic 10	36	17	19
Clinic 11	24	8	16
Clinic 12	32	13	19

With this above literature on the efficacy of carica papaya extract, the prescription pattern and use of the extract, caripill is assessed among the registered medical practioners.

Materials and Methods

It is an observational study based on the data collected from the registered medical practitioners who are doing their general practice in Chennai between june 2019 to November 2019. For this study, the datas of the dengue patient found positive and the treatment modalities were collected. Most of the doctors are full time general practitioners with an outpatient clinic setup. The records of the patients included their age, sex, clinical signs and symptoms, the investigations done for evaluating dengue infection(NS1positvive), platelet count and complete hemogram. Those patients whose platelets are normal will be categorized under dengue fever and those patients whose platelets fall below 50000/µl of blood will come under dengue hemorrhagic fever. This was collected for a 6 month period between June 2019 to November 2019.

Here the inclusion criteria will be patients in the age group of 25 to 50 years, both male and female, NS1 positive, dengue fever (i.e. platelet count normal). Exclusion criteria will be patients less than 25 years, more than 50 years, patients 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 evaluated.

Data collection and analysis: The date was collected from 12 outpatient clinics in an urban area of Chennai, mogappair. All the doctors running the clinic were registered medical practitioners. The datas 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 datas are as follows:

The dosage of caripill is 1100mg thrice a day for five days. This is the drug manufactured by microlabs india.

Statistical analysis:

The datas given above in the tabular column are analysed statistically. The figure1 shows the pattern of each clinic showing their prescription pattern with and without caripill. Fig. 1:

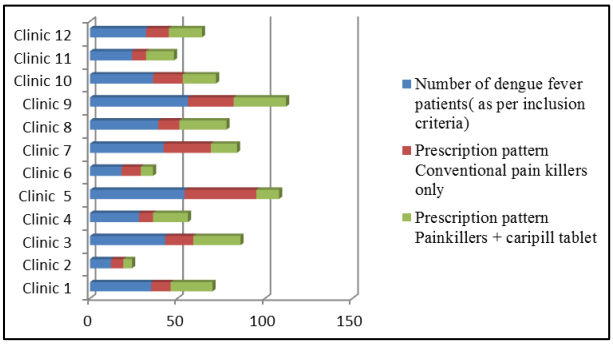

Fig. 1

Results

The efficacy of carica papaya leaf extract is evident in this study.[17] 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 above figure 1 that around 8 out of 12 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.

Discussion

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 heamorrhagic 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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Conflict of Interest

None.

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