

# Treatment Strategies of Dengue Fever using Medication Therapy Management: A Descriptive Outcome Based Study

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## Introduction

Dengue is an acute viral infection in tropical and subtropical regions. Dengue is a major public health crisis in numerous regions of the world. The aim of this research is to study the Medication Therapy Management (MTM) of patients with dengue admitted in ESI hospital, Bangalore. Also, to improve the quality of life of patients, to address issues of polypharmacy, preventable adverse events, medication adherence and medication misuse and to improve outcomes by helping people to better understand their health conditions and the medications used to manage them. It is a descriptive, observational, and interventional study. The data is collected through suitably designed forms and by direct interaction with the patients as well as their care takers. The study cohort consists of 57 patients. All the patients in the study population are treated with Paracetamol, Pantoprazole and Cephalosporins and Methyl prednisolone, IV fluids and vitamin k. In our study maximum drug interactions are seen with Dexamethasone and Pantoprazole in 27 (47.36%) patients. Minimum drug interactions were seen with Ciprofloxacin and Ondansetron as well as Ciprofloxacin with vitamin k and Dexamethasone with Ciprofloxacin among 3 (5.26%) patients. Process measures (type and frequency of drug therapy problems detected), economic measures (number of medications dispensed), and humanistic measures, (patient satisfaction with services) were the main outcomes in this process after providing MTM services. During hospitalization, patients improved their quality of life and their state of illness reduced. MTM provided safe and effective medication. Successful MTM assisted the patients to manage their own treatment.

Dengue fever is a mosquito-borne tropical disease caused by the dengue virus. Dengue ranks as the most important mosquito-borne arboviral disease. Dengue is a major public health difficulty in numerous regions of the world. Dengue virus causes symptomatic or asymptomatic infections. It has a wide clinical spectrum that includes both severe and non-severe clinical manifestations. Initial symptoms of the disease appear in about 5-7 days after the infected mosquito bites a healthy person. After the incubation period, the illness starts abruptly in patients with moderate to severe disease. It is followed by 3 phases namely febrile, critical and recovery phase [1].

Dengue (DEN) Virus, a member of the genus Flavivirus which belongs to the family Flaviviridae, is one of the most spreading pathogens which are classified into 4 serotypes DEN-1, DEN-2, DEN-3, DEN-4. Dengue fever is usually self-limited illness. There is no specific antiviral drug currently available for dengue fever. No medication has been found to be useful in treatment dengue and its association disorder or complication. Acetaminophen (paracetamol) is used to treat fever and relieve other symptoms. Aspirin, Non-steroidal anti-inflammatory

drugs (NSAIDs) should be avoided [2]. Oral fluids and electrolyte therapy are recommended in patients with vomiting and diarrhea, excessive sweating. The management of DHF during the febrile phase is similar to that of DF. Usually, significant plasma loss is seen in dengue patients, it leads to a rise in hematocrit value, to overcome from this parenteral fluid therapy is recommended.

## METHODOLOGY

**Study design and site:** It is a descriptive, observational, and interventional study which was conducted in an ESI hospital, Bangalore.

**Study sample:** 57 inpatients are diagnosed with dengue and undergone medication therapy during the study period of six months from November 2019 to April 2020 and were included in this study.

Comorbidity refers to the presence of more than one disorder in the same person. Out of 57 study population, 30 (52.63%) patients were suffering from dengue, 1 (1.75%) patient was suffering from dengue with Urinary tract infection (UTI) and hepatitis, 3(5.26%) patients were suffering from dengue with hepatitis, 1(1.75%) patient was suffering from dengue with UTI and hypophosphatasia, 1(1.75%) patient was suffering from dengue with Lymphocytosis, 3(5.26%) patients were suffering from dengue with UTI, 4 (7.01%) patients were suffering dengue in pregnancy, 4 (7.01%) patients were suffering dengue with diabetes mellitus, 1(1.75%) patient was suffering from dengue with rheumatoid arthritis, 3(5.26%) patients were suffering from dengue with gestational hypertension, 3(5.26%) patients were suffering from dengue with typhoid, 1 (1.75%) patient was suffering from dengue with jaundice, 1 (1.75%) patient was suffering from dengue haemorrhagic fever, 1( 1.75% ) patient was suffering from dengue with diabetes mellitus and hepatitis.

## CONCLUSION

Dengue infection results in significant morbidity and mortality worldwide. Current recommended treatment is largely supportive with careful fluid replacement, with no specific treatment available. Although corticosteroids are not mentioned in the WHO guidelines on the management of dengue, clinicians use corticosteroids empirically based on the presumed immunological basis of the complications of dengue. Dengue fever in pregnancy most often is treated conservatively. Acetaminophen is used to manage pain and fever but contraindicate nonsteroidal anti-inflammatory agents (NSAIDs) because of potentially increased bleeding risk, with thrombocytopenia as a complication. The reasons behind drug

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interactions are found as comorbid conditions and polypharmacy.