



RESEARCH ARTICLE

PREVALENCE AND ASSESSMENT OF PRESCRIPTION PATTERN ANALYSIS OF ACUTE FEBRILE ILLNESS PATIENTS IN TERTIARY CARE HOSPITAL: A PROSPECTIVE OBSERVATIONAL STUDY

V. Sathish Kumar¹, D. Monika², K. Malleswari², T. Sai Swapna³, N. Venkata Shanmukha Rao⁴, Ajay Undrakonda⁵ and P. Srikanth⁶

1. Pharm.D, (Ph.D.), Acharya Nagarjuna University, Guntur, Andhra Pradesh, India.
2. Pharm.D, Nalanda Institute of Pharmaceutical Sciences, Satenapalli, Andhra Pradesh, India.
3. Pharm.D, Nirmala College of Pharmacy, Mangalagiri, Andhra Pradesh, India.
4. M.B.B.S, Critical Care Medical Officer, Tulasi Multispecialty Hospital, Guntur, Andhra Pradesh, India.
5. Pharm.D, Nirmala College of Pharmacy, Mangalagiri, Andhra Pradesh, India.
6. Professor, H.O.D of pharmacology, Samuel George Institute of Pharmaceutical Sciences, Markapur, Andhra Pradesh, India.

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Abstract

Aim and Objective: Assessment of prescription patterns may help the identification of clinical use of drugs in fever patients. Rational use of drugs may control the utilization of selective drugs in acute febrile illness.

Methodology: A Prospective observational study was conducted in the General Medicine department in tertiary care hospital. Wards inpatients and outpatients with or without past and personal history were included in the study.

Results: A Total of 357 were admitted with fever patients. In this study, patients of the 21- 30 age group patients have shown more prevalence. A total of -357 patients who were prescribed antibiotics were included in the study. Out of 357 cases, female patients 148 (41.45%), and male patients 209(58.54%). in this study maximum number of diseases was found to be dengue 103(28.85%), Out of 1250 medications, the highly prescribed formulation was parenteral dosage forms 825 (66.00%).

Conclusion: A specially designed protocol is important for fever patients before prescribing to the patients; evaluation of fever with suitable criteria is required. In other words, without knowing the diagnosis or focus of the disease, treatment or medications does not stop the fever spikes.

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Introduction:-

Globally, fever is one of the most common causes of medical consultations as well as one of the oldest clinical indicators of disease for mammals ⁽¹⁾. Compared to primary and secondary care hospitals tertiary care involves highly specialized health care over an extended period of time and often involves advanced therapy, complex investigations procedures and treatments². the main source of community-acquired bacteremia is Urinary tract infections (UTIs) in geriatric patients^[3, 4]. Patients from asian countries were affected with tropical fevers including Dengue, malaria, leptospirosis, influenza A,

Corresponding Author:- V. Sathish Kumar

Address:- Pharm.D, (Ph.D.), Acharya Nagarjuna University, Guntur, Andhra Pradesh, India.

Typhoid and rickettsiosis including scrub typhus, Japanese encephalitis (JE), and chikungunya were some also common.[6- 11]

In middle-income countries like India, most of the people are economically unstable, so we have to prescribe the minimum laboratory tests to avoid economical burden to the patients. In view of patient's advised laboratory tests should be correlated with clinical signs and symptoms. If the etiology is not identified and treated effectively as soon as possible, the fever may be fatal. In tropical countries, infectious diseases represent a significant percentage of morbidity and mortality.

Some of these diseases can cause severe thrombocytopenia, which can be life-threatening. The presence of thrombocytopenia in acute febrile illness should alert the clinician to identify the etiology and prompt treatment of the patient [12].

Clinically, fever usually presented with different aetiologies, such as infectious (malaria, enteric fever dengue, scrub typhus, sepsis leptospirosis, acute viral hepatitis, etc.,) and non- infectious (connective tissue disorders, autoimmune, malignancies, and other miscellaneous causes).⁵

A Prospective observational study was conducted in the General Medicine department of the hospital.

Prolonged stay in hospital or Long-term medical treatment definitely leads to all possible prescribing then leads to failure of quality treatment to patients and it is regulated good clinical practice.

Methodology:-

A hospital-based Prospective observational study was conducted in the Department of General Medicine at Tulasi Multispecialty Hospital, Guntur, India. We collected 357 patient's data of general medicine cases inwards without interrupting the patient treatment and without the involvement of the patients. We were using the specially designed proforma for collecting the different parameters like comorbidities, patient demographic, past and personal history of the patient, and medications prescribed for the patient. The required data were collected from the case files of the patient and patient counseling in ward rounds.

Study Design:

A prospective observational study.

Study Site:

The study was conducted in the Department of General Medicine, Tulasi Multispecialty Hospital, Guntur, India.

Study Population:

357 cases were collected from general medicine cases in wards according to study criteria.

Inclusion Criteria:

1. Patient of Any age.
2. Patients of either sex.
3. Patients with Co-morbid conditions.
4. Patient with past and personal history

Exclusion Criteria:

1. Pregnant and lactating women.
2. The Patient went on LAMA
3. Patient with a history of cancer-related issues.

Data Analysis:

Data was analyzed on MS Excel and descriptive statistics was used for analyzing the result of the study.

Results:-

Table 1:- Prevalent diseases among acute febrile illness patients.

S. No	Case	No of Patients	Male	Female	Percentage
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1	Dengue	103	63	40	28.85
2	Malaria	32	18	14	8.96
3	Scrub Typhus	63	38	25	17.64
4	LRTI	15	11	4	4.2
5	UTI	29	5	24	8.12
6	Typhoid	17	10	7	4.76
7	Sepsis	25	17	8	7.0
8	Gastroenteritis	6	4	2	1.68
9	Dengue + Malaria	7	4	3	1.96
10	Dengue + Typhoid	16	10	6	4.48
11	Malaria + Typhoid	15	8	7	4.20
12	Others	29	21	8	8.12
	Total	357	209	148	100

Table 2:- Distribution of the patients according to age groups.

S. No	Age group	No of patients	Male	Female	Percentage (%)
1	10-20	38	23	15	10.64
2	21-30	128	62	66	35.85
3	31-40	77	44	33	21.56
4	41-50	50	14	36	14.00
5	51-60	40	30	10	11.20
6	61-70	18	12	6	5.04
7	71-80	6	3	3	1.68
	total	357	209	148	100

Table 3:- Disease pattern reported with co-morbidities.

Disease with Comorbidity	No. of Patients	% of Population
Dengue + HTN	8	2.24
Dengue + DM	11	3.08
Dengue + HTN + DM	6	1.68
Dengue + DM + Vertigo	3	0.84
Dengue + Hypothyroidism	12	3.36
Sepsis + DM + HTN	5	1.4
Scrub typhus + hypothyroidism	9	2.52
Scrub typhus + DM + HTN	21	5.88
Scrub typhus + HTN	4	1.12
Scrub typhus + DM	7	1.96
LRTI + HTN	3	0.84
LRTI + DM	4	1.12
UTI + DM	6	1.68
UTI + HTN + DM	14	3.92
Malaria + HTN	7	1.96
Malaria + DM	11	3.08

Table 4:- List of patients simultaneously suffering from co-morbid illness.

S.no	No of disease	No of patients	Percentage (%)
1.	1	226	63.30
2.	2	82	22.96
3.	More than 2	49	13.74
	Total	357	100

Table 5:- Distribution of Antibiotics in the study population.

S. No	Antibiotic	No .of prescriptions	Percentage
1	Ceftriaxone	146	40.89

2	Doxycycline	84	23.52
3	Azithromycin	46	12.88
5	Piperacillin+ Tazobactam	8	2.24
6	Amoxicillin + Clavulanic acid	37	10.36
7	Artesunate	54	15.12
8	Artemether + lumefantrine	49	13.7
9.	Nitrofurantoin	29	8.12
10	Amikacin	23	6.44
11	Meropenem	17	4.76

Table 6:- Ten Most Frequently Prescribed Medications.

S. No	Medication name	No .of prescriptions	Percentage
1	Paracetamol	357	28.56
2	Vitamin – C	253	20.24
3	K – Nerve	246	19.68
4	Pantoprazole	242	19.36
5	Multi-Vitamin Supplement	205	16.4
6	Monocef	146	11.68
7	Rabeprazole	115	9.2
8	Doxycycline	84	6.72
9	Naproxen + Domperidone	76	6.08
10	Artesunate	54	4.32

Table 7:- Dosage Forms used in the study.

S. No	Route of administration	Total. No of cases	Percentage
1	Oral	128	35
2	Intravenous (IV)	206	58.3
3	Intramuscular (IM)	23	6.66
	Total	357	100

Table 8:- Prescription Analysis.

S.no	Prescription catalog	Results
1.	Total number of prescriptions analyzed	357
2.	Total number of medications prescribed	1250
3.	Average number of medications per prescription	3.5(1-5)
4.	Percentage of medications prescribed by Generic Name	542/1250(42%)
5.	Percentage of medications prescribed by Brand Name	725/1250(58%)
6.	Percentage of medications prescribed by Solid dosage form	418/1250(33%)
7.	Percentage of medications prescribed by Parenterals	825/1250(66.00%)
8.	Percentage of medications prescribed by Nebulizations	162/1250(16%)
9.	Percentage of medications prescribed by Syrups	225/1250(18%)
10	Percentage of medications prescribed by other formulations	56/1250(4.26%)

Discussion:-

In our study, we observe that is patient came with intermittent high-grade fever for some more days. Initially, primary investigations were written for the clues regarding the diagnosis and treatment to treat the patient. Most commonly fevers are associated with chills also. the Most common seasonal causes were dengue, malaria, scrub typhus, and LRTI. In some other cases like gastroenteritis, sepsis conditions may also get a fever.

We found resembling studies from India and other tropical regions of the developing world suggested that scrub typhus (47.5%), malaria (17.1%), enteric fever (8%), and dengue (7%) were the most prevalent tropical fevers among adult patients.[18] Similarly, in a large cohort of 2547 patients with acute undifferentiated febrile illnesses dengue (37.54%), enteric fever (16.5%), scrub typhus (14.42%), bacterial sepsis (10.3%), and malaria (6.8%) were

the main infections identified.[19] and also another study shows Dengue (23%) was the most common followed by scrub typhus (18.2%), encephalitis/meningitis (9.6%), malaria (8.1%), and bacterial sepsis (7%)[20]

In this study, 21-30 age group patients have shown more prevalence when compared to that of other age groups. Out of 357 cases, female patients 148(41.45%) and male patients were 209 (58.54%).

Initially to treat the patient antibiotics like doxycycline, and ceftriaxone is widely used antibiotics in fever conditions [20]. Cefepime, and Azithromycin are also used for conditions like acute undifferentiated febrile illness. Multivitamin was also started along with to treat the patient. If primary investigations do not show any clue for provisional diagnosis then forward to blood culture sensitivity, urine culture & sensitivity.

If WBC counts are elevated and thrombocytopenia may give clues for provisional diagnosis and to start the main treatment. In seasonal viral fevers, we used some tests like Dengue rapid, widal tests, malaria card tests, and chest X-ray. In females most commonly Urinary tract infections caused the fever and to confirm the diagnosis urine culture and sensitivity were sent. sepsis or blood-related infections also cause continuous fevers to confirm the organism and treatment choice blood culture and sensitivity were sent.

In geriatric patients and the immunocompromised patient may get the respiratory tract infections were cause the fevers and to confirm the diagnosis sputum analysis tests, chest xray were performed to drug of choice for the quality treatment of the patients.

Finally, our results are similar analysis to those found in studies from India. A report from south India suggested that the Percentage of medications prescribed by generic name is 60.28 % [13, 14, 15, 16, 17]. Percent of prescriptions are prescribed on brand names is 71% [21]

The drawbacks of the special tests like blood culture & sensitivity, urine culture & sensitivity, sputum for culture & sensitivity, CBNAAT for sputum analysis reports were obtained after 3 days after the sample sent to the lab.

Conclusion:-

The epidemiological studies of acute febrile illness patients have shown the maximum prevalence of dengue. The prevalence of dengue in this current study was 28.85% (n=103). The age between 21-30 years has a higher prevalence rate of acute febrile illness patients. In some cases symptomatic and other supportive treatments subside the fever spikes. A specially designed protocol is definitely important for fever patients before prescribing to the patients; evaluation of fever with suitable criteria is required. In other words, without knowing the diagnosis or focus of the disease, treatment or medications does not stop the fever spikes.

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