



CLINICAL PROFILE AND OUTCOME OF PATIENTS WITH TROPICAL FEVER

General Medicine

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ABSTRACT

Objectives: Tropical fevers are defined as infections that are prevalent or are endemic to tropical and subtropical regions. These mainly include dengue fever, scrub typhus, malaria, typhoid fever, leptospirosis and chikungunya fever. These infections have very commonly respiratory involvement leading to very high morbidity and mortality. So the aim is to study the clinical profile and outcome of patients of tropical fever that will further helps in better management of such infections.

Materials and Methods : This was an observational study of patients of tropical fever conducted at tertiary care hospital, Punjab. Total 200 patients were enrolled. Out of 200 patients maximum no. of patients were of dengue fever (119) followed by scrub typhus (45). Males (64.5%) were more affected than females (35.5%) with maximum no. of patients in 21-30 age group. Fever was the most common presenting complaint in all. ARDS was associated with poor prognosis in dengue and scrub typhus with statistically significant p-value.

Conclusion: Early diagnosis and proper management of these cases can significantly reduce the burden of tropical fever especially in developing country like India.

KEYWORDS

Tropical , fever, Respiratory involvement, ARDS

INTRODUCTION -

Tropical fevers are defined as febrile illness prevalent in or are endemic to tropical and sub-tropical regions, India being one of the largest regions. Acute febrile illness is one of the most common presenting complaints of patient in developing countries especially in emergency. They have overlapping clinical manifestations so it is difficult to arrive at specific diagnosis and delayed diagnosis leads to poor management and increased morbidity and mortality.

Since the clinical presentation of these diseases is very similar, hence this study is done to study the clinical profile and outcome of these patients to improve the morbidity and mortality.

Materials and Methods – This observational study was done in the Department of Medicine at Tertiary care hospital, Ludhiana, Punjab over the time period of 1 year.

SOURCE OF DATA-

Inclusion Criteria-

1. Patients of either sex diagnosed to have Tropical fever illness (Dengue fever, Scrub typhus, malaria, Leptospirosis, typhoid fever, chikungunya fever) with serology positive reports confirmed from microbiology department
2. Adult (more than 18 years of age)

Exclusion Criteria-

1. Patients having tropical fever with negative serology.
2. Pregnant and Lactating females.
3. Patients with pre-existing lung diseases (COPD, Interstitial lung disease, pulmonary Koch's),

CAD, CKD, CLD.

METHOD OF COLLECTION OF DATA

Sample collection

Blood – collected by venipuncture taking all aseptic precautions.

Sample was sent for Routine investigations includes Complete blood count, Renal function test, Liver function test, Serology tests (Leptospira IgM ELISA, Scrub typhus IgM ELISA, Dengue IgM capture ELISA, Dengue NS1 antigen ELISA, Malaria Rapid card test, Widal test.

Statistical analysis-

The data obtained was analyzed using descriptive statistics. The chi square test was used to calculate the p value. p-value <0.05 was taken as significant.

OBSERVATIONS AND RESULTS

This observational study was done in the Department of Medicine at Tertiary care Hospital, Ludhiana in which 200 patients of tropical fever with varied clinical presentation were enrolled.

Out of these 200 patients, maximum number of patients were diagnosed to have dengue fever in 119 (59.5%) followed by scrub typhus in 45 (22.50%), leptospira in 25 (12.50%), malaria in 10 (5.00%) and typhoid in only 1 (0.5%). There was no case of chikungunya.

Distribution of cases according to diagnosis (n=200): Table 1

Table 1

Final Diagnosis	No. of cases	Percentage
Dengue	119	59.50%
Scrub typhus	45	22.50%
Leptospira	25	12.50%
Malaria	10	5.00%
Typhoid	1	0.50%
Total	200	100.00%

Patients affected of tropical fever had greater proportion of males compared to females. In our study overall 64.5% were males and 35.5% were females.

Among the cases of dengue fever most common presenting symptom .It was seen that fever in 117 (98.3%) followed by breathlessness in 95 (79.8%), myalgia in 84 (70.6%) and headache 65

(54.6%). Bleeding manifestations were seen in the form of black coloured stools in 25 (21%) patients and among 3 (2.60%) cases, one had hemoptysis, one had gum bleed and one had nasal bleed. Neurological manifestations were seen in 4 (3.4%) cases (Table 2)

In cases of scrub typhus, most common symptom was fever in 38 (84.4%) cases followed by breathlessness in 34 (75.60%) and headache in 24 (53.30%) cases. Yellowness of eyes was seen in 16 (35.6%) cases. Decreased urine output was observed in 10 (22.20%) cases. Loose stools and diarrhea was seen in 6 (13.3%) cases and neurological manifestations were seen in 6 (13.3%) cases.

In cases of leptospirosis, most common symptom was fever in 23 (92%) cases followed by breathlessness and headache. Jaundice and decreased urine output were seen in 8 (32%) and 5 (20%) cases respectively

Table no. 2 – Distribution of the cases of dengue fever according to presenting complaints (n=119)

Presenting Complaints	No. of cases	Percentage
Fever	117	98.30%
Breathlessness	95	79.80%
Myalgia	84	70.60%
Headache	65	54.60%
Pain Abdomen	33	27.70%
Black Coloured Stools	25	21.00%
Any Other GI symptom	24	20.20%
Cough	19	16.00%
Skin Rash/itching	18	15.10%
Yellowness of Eyes	6	5.00%
Altered Sensorium	4	3.40%
Decreased Urinary Output	4	3.40%
Bleeding from any site	3	2.60%
Joint Pains	1	0.80%

In our study we had 10 cases of malaria, all had plasmodium vivax. All cases had fever (100%) followed by myalgia and headache in 60% of cases. 1 case out of 10 had neurological involvement in the form of altered sensorium.

In our study, 1 case of typhoid fever who required oxygen support was seen which presented with fever, cough, breathlessness and myalgia. Most of the patients of pleural effusion with any etiology were discharged. No significant difference was observed in various etiologies.

Also among the cases of ARDS, there was almost 54.4% mean of cases with poor outcome and no statistically significant difference was seen.

In the cases of pneumonitis, 75% cases of scrub typhus had poor outcome which is statistically significant with p-value of 0.023 as compared to other etiologies with pneumonitis.

In this study, mortality was seen in 10.9% of dengue, 20% of scrub, 8% of leptospira patients. There was no mortality seen in malaria and typhoid.

Outcome of cases in various etiologies: Table 3

Table–3

Outcome	Final Diagnosis										Total	p-value
	Dengue	Dengue	Scrub	Scrub	Leptospira	Leptospira	Malaria	Malaria	Widal	Widal		
Discharged	95	79.8%	30	66.7%	16	64.0%	9	90.0%	1	100.0%	151	0.174
DAMA	11	9.2%	6	13.3%	7	28.0%	1	10.0%	0	0.0%	25	0.143
Expired	13	10.9%	9	20.0%	2	8.0%	0	0.0%	0	0.0%	24	0.315

The mean duration of hospital stay was 13.20 days in cases of malaria which is maximum as compared to others. The mean duration of hospital stay in dengue, scrub typhus, leptospira was 8.71, 9.96 and 8.88 days respectively.

DISCUSSION

This was a prospective study, patients diagnosed with tropical fever (serology – positive) were enrolled for the study. 200 cases were taken meeting the inclusion and exclusion criteria and clinical profile and outcome in all the cases was studied at the end.

Out of 200 patients, 119 patients were of dengue fever followed by 45 of scrub typhus, 25 of leptospirosis, 10 of malaria and 1 of typhoid fever, dengue fever being the most common. Similar to our study, an

observational study was conducted by Sunit Singh et al. in 34 ICU's across India over the period of 15 months from July 2013 to September 2014 in which total of 456 patients were taken. Etiology was established in 367 patients and dengue fever was found out to be the most common cause in 105 cases followed by scrub typhus.[1]

In another study conducted by Garima Mittal et al., total of 2547 patients were taken out of which dengue fever was found out to be the most common cause contributing to 37.54%, enteric fever in 16.5%,

scrub typhus in 14.42%, malaria in 6.8% and leptospirosis in 0.14%.[2]

In the present study, there were 129(64.5%) males and 71(34.5%) were females. Males were affected more than the females as males are more exposed to outdoor environment. Study conducted by Ragini Singh et al., also found males 618(54.2%) to be affected more than females 523(45.8%).[3]

Similarly a study conducted by Garima Mittal et al., in which 2547 patients were taken, also showed male predominance with 1663(65.3%) males and 884 (34.7%) females.[2]

In present study among the cases of dengue fever, most common presenting symptom was fever in 117(98.3%) followed by breathlessness in 95(79.8%), myalgia in 84(70.6%) and headache in 65(54.6%).

Viral fevers are known to cause myalgia and headache. Deshwal et al., conducted a study on clinical and laboratory parameters in dengue fever in which 515 patients were taken and fever was the major symptom seen in 100% of cases followed by headache in 94.75% and myalgia in 90.67% of cases, which is similar to our study. [4] Likewise a study conducted in Northern India by Anish et al., 115 confirmed cases of dengue fever were taken and fever was present in 100% of cases, headache in 87% and body ache in 86% of cases. [5]

In our study 4(3.4%) cases had neurological involvement in the form of altered sensorium, Anish et al.[58], also observed neurological involvement in 3(2.6%) cases. Isolated nerve palsies are also known to occur in dengue fever as reported by Peter et al.[6]

Scrub typhus is an emerging zoonosis, caused by O.tsutsugamushi and transmitted by the bite of trombiculid chigger mites.

In our study, 84.4% cases presented with fever and 75.6% with breathlessness. Jaundice, pain abdomen and decreased urine output was seen in 35.6%, 20% and 22.2% respectively. A study conducted by Navneet et al., in North India where 228 patients of scrub typhus were studied and high grade fever was present in 85%, jaundice in 32%, abdominal pain in 28% and renal failure in 11% which is in concordance with our study.[7]

In our study, the cases of leptospirosis most commonly presented with fever, seen in 92% of cases and breathlessness in 68% of cases. Hepatorenal involvement is common in leptospirosis. In our study jaundice was present in 8(32%) of cases and oliguria in 5(20%) of cases. Goswami et al., in a study, found out jaundice in 62(62.4%) and oliguria in 35(34.7%) of cases.

In the present study among the cases of malaria, fever was the commonest manifestation present in 100% cases followed by myalgia and headache in 60%, jaundice in 50%,

breathlessness in 40%, altered sensorium in 10% whereas in a study conducted by Shivraj et al., fever was present in 100% cases as similar to our study but jaundice was present in 27%, breathlessness in 5% and altered sensorium in 4% of cases.[8]

Our study's results are nearly similar to study done by Gopinath VP et al., who reported fever in 97.8% and headache in 69%, altered sensorium in 8.8% cases.[9]

In our study, ARDS in dengue fever, scrub typhus, leptospira and malaria was 31.9%, 37.8%, 44% and 20% respectively. Study conducted by Bhadade et al., studied the etiologies for ARDS and concluded that tropical diseases like malaria, dengue fever and leptospirosis were the main factors responsible for ARDS.[10]

Among all the etiologies, ARDS was associated with poor outcome with significant p-value in dengue fever and scrub typhus. So, timely interventions in these cases can significantly reduce mortality.

CONCLUSION:

Early diagnosis and proper management of these cases can significantly reduce the burden of tropical fever especially in developing country like India.

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