



STUDY OF ETIOLOGIES OF ACUTE FEBRILE ILLNESS IN TERTIARY CARE HOSPITAL OF WESTERN UTTAR PRADESH

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ABSTRACT This retrospective study was carried out on 274 patients presenting with acute febrile illness in a tertiary care hospital of western Uttar Pradesh. All the patients between 18 to 59 years presenting with AFI of more than 2 days were included. Serological tests for dengue fever, malaria and typhoid fever were performed. Slides for malarial parasite and urine for U.T.I. were also examined. Dengue was commonest (31.03%), followed by malaria (18.61%), typhoid (17.15%), UTI (15.69%) and in 17.52% cases no cause was found. Males predominated with male: female ratio of 1.28:1. Dengue was common during September and October. Malaria and typhoid were more common during July & August. In this study a definite seasonal trend was observed. Public awareness is necessary for prophylaxis for reducing the burden of these diseases.

KEYWORDS : Dengue, Malaria, U.T.I., Typhoid.

INTRODUCTION

Acute febrile illness (AFI) remains a challenge for treating physicians. These patients present with almost similar clinical features such as high grade fever, myalgia & fatigue. The etiologies of these illnesses remain poorly characterized. In the developing world common causes of AFI include dengue fever, malaria, enteric fever, leptospirosis, rickettsiosis, and Japanese encephalitis, (Kashinkuntial.). These are more common during or after the rainy season. For health care providers and public health officials knowledge of local pattern of these diseases is very essential for making informed treatment and prevention decisions. In many areas of developing countries the diagnostic facilities are limited, etiologies remain presumptive. A careful search has not revealed any published data on this topic in the western part of Uttar Pradesh except for one from Uttarakhand, (Singh et al.) and mosquito borne diseases from Ghaziabad district, (Rani et al.). So the present study was undertaken to determine the etiologies of AFI in a tertiary care hospital of western part of Uttar Pradesh.

MATERIAL & METHOD

This study was conducted on 274 patients presenting with acute febrile illness between the age range of 18 to 59 years admitted in IPD of a tertiary care hospital of Uttar Pradesh during the last 1 year.

Inclusion criteria

- Fever of at least 2 consecutive days with temperature $\geq 38^{\circ}\text{C}$ (100.4°F)
- Age between 18 to 59 years.

Exclusion criteria

- Septicemia
- Transfusion reaction
- Allergic / drug reactions.
- Patients on therapy.

Detailed history was taken and complete clinical examination was done.

Blood sample for CBC and general blood picture was collected in EDTA. Blood smear was stained by Leishman's stain for identification of malaria.

- Malaria card test was also performed.
- Dengue was confirmed by IgM/IgG antibody tests.
- Typhoid was confirmed using Typhoid IgG/IgM test.
- Urinary tract infection was confirmed by microscopic

examination of urine followed by culture. Pus cells $>5/\text{hpf}$ with or without bacilli in a clean catch midstream urine sample was considered positive for UTI.

Data Analysis

It was done by descriptive statistics

RESULTS:

A total of 274 cases with age range of 18 to 59 years were studied for the cause of AFI. Dengue was commonest (31.03%) followed by malaria (18.61%), typhoid (17.15%) and U.T.I. (15.69%). In 17.52% cases no cause was found (Table 1).

Table 1. Etiological Distribution of different cases of acute febrile illness

Case	No of patient	Percentage
Malaria	51	18.61%
Dengue	85	31.03%
Typhoid	47	17.15%
Urinary tract infection	43	15.69%
Non-specific	48	17.52%
Total	274	100.00%

Maximum number of patient (41.60%) were in the age range of 18 to 29 years followed by 30-39 years (23.73%) (Table 2). Males were more in comparison to females with male : female ratio of 1.28:1 (Table 3).

Table 2. Age wise distribution of different etiologies of acute febrile illness

Age	Malaria	Dengue	Typhoid	Urinary tract infection	Non-specific	Total patient
18-29	27	39	11	16	21	114(41.60%)
30-39	15	16	15	06	13	65 (23.73%)
40-49	04	14	13	10	07	48 (17.52%)
50-59	05	16	08	11	07	47 (17.15%)
Total	51	85	47	43	48	274(100.0%)

Table 3. Sex Wise distribution of different etiologies of acute febrile illness

Sex	Malaria	Dengue	Typhoid	Urinary tract infection	Non-specific	Total patient

Male	27	59	27	13	28	154(56.01%)
Female	24	26	20	30	20	120(43.09%)
Total	51	85	47	43	48	274(100.00%)

These patients were more during monsoon period. Malaria and typhoid fever were more common during July and August, whereas dengue cases were more in the month of September and October. In malaria majority of patients (94.11%) suffered from P.vivax infection. P. falciparum infection and mixed infection were rare accounting for 3.91% and 1.98% cases respectively.

DISCUSSION

The causes of febrile illnesses remain poorly characterized due to limited resources in the developing countries. In Thailand, Malaysia and Nepal the cause of AFI was reported to be dengue, malaria, scrub typhus, typhoid and leptospirosis (Ellis et al., Lellarsamee et al., Murdoch et al., and Sripanidkulchai et al.,). Kashinkuntietal., from Karnataka reported scrub typhus (33%), dengue (25%), enteric fever (14%), malaria (8.0%). Chrispaletal., from a tertiary care hospital in South India reported scrub typhus (47.5%) followed by malaria (17.1%), enteric fever (80%), dengue (7.0), leptospirosis (3.0%), spotted fever rickettsiosis (1.8%), Hanta virus (0.3%) as the causes of AFI and alternate diagnosis and unclear diagnosis was rendered in 7.3% and 8.0% cases respectively.

In a retrospective study from Uttarakhand, Singh et al., reported dengue fever in 71.2%, malaria in 12.8%, typhoid in (8.1%) and scrub typhus in (6.0%) cases. Mixed infection was noted in (1.9%) cases. In the present hospital based study, we encountered dengue in (31.03 %), malaria in (18.61%), typhoid in (17.15%), UTI in (15.69%) as the cause of AFI. In 17.52% cases, no specific cause was found, and these cases were labelled as non-specific illnesses. These illnesses were more common during monsoon season. This can be due to monsoon being convenient period for mosquitoes to breed and infected mites to thrive (Rani et al.,). Drinking water also get polluted in rainy season.

In this study cases of malaria were more in July and August and dengue fever cases were more during September and October. There is clustering of cases during this period. Ittyachenetal., also reported a definite seasonal trend.

In the present study, age of the patients ranged from 18 to 59 years with maximum number of patients (41.60 %) being in the age range of 18 to 29 years, followed by 23.73 % in the age range of 30 – 39 years. Singh et al., reported 25.5% cases in the age range of 21-30 years, and Kashinkuntietal., reported maximum number of patients (36%) in the age range of 21-40 years. Mean age of patients in this study was 33.7 years which was almost similar to the study conducted by Abrahamson et al., who reported it to be 37.4 years. Ittyachenetal., also reported most of the patients to be in the reproductive age group (18-45 years).

In the present study, males (56.1%) predominated over females (43.9%) with male to female ratio of 1.28:1. Male predominance has also been reported in the past by a large number of workers (Kashinkuntietal., Singh et al., Ellis et al., and Kasper et al.,). This can be due to males being more active in outdoor activities, they get easily exposed to mosquitoes and mites. In this study, P. vivax was the commonest species accounting for 94.1% followed by P. falciparum (3.91%) and mixed infection (1.98%). This is similar to a number of workers who have also found P. vivax as the commonest species (Chandra & Chandra., Jairajpurietal., Kesperetal., Lathia & Joshi.,). In the present study the cause of acute febrile illness was identified in 82.48 % cases. Similar results (82.5%) have been reported by Kundavarametal, whereas in other studies it varies from 40% to 73.3% (Manocketal., and Suttinontetal.,).

CONCLUSION

The etiological cause of AFI was found in 82.48% cases. Commonest cause was dengue fever followed by malaria, typhoid, and UTI. In 17.52 % cases, no specific cause was found. The etiological profile of acute febrile illness will be of use for physicians to treat the patients as these diseases has similar clinical presentation, and for health workers for control.

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