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AN OBSERVATIONAL STUDY CENTRE OF BIHAR ON CLINICAL PROFILE OF ACUTE FEBRILE ILLNESS DURING MONSOON AND POST MONSOON

General Medicine

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ABSTRACT

Background: To assess etiology, clinical profile, signs and laboratory parameters significantly associated complicated acute febrile illnesses among inpatients in a tertiary care hospital during monsoon and post monsoon.

Materials & Methods: This was an observational study conducted in a tertiary care and research centre of Bihar. In this study we had included the case of patients who had admitted in the hospital with acute febrile illness during monsoon and post monsoon. From clinical records collective data of demographic, clinical and laboratory were collected in predesigned proforma and analysed. Between organ specific complications and death associations were sought.

Results: Of the 198 cases studied 127 were dengue, 3 were hepatitis E, 29 were malaria, 34 were leptospirosis and 5 were mixed infections. over all major common symptoms are body ache (84.8%), headache (74.7%), nausea or vomiting (73.2%) apart of other symptoms like coloured urine (36.9%), abdominal pain (48.5%), diarrhea (15.2%), rash (20.2%) and shortness go breath (33.3%). As per statistical correlation symptoms which were significantly associated with complications were shortness of breath (P=0.001), coloured urine (P=0.003), diarrhea (P=0.002) where as other symptoms were not significantly associated. rapid week pulse (32.8%) was most common sign after tachypnoea (22.2%). Tachypnoea (P=0.001) and pedal edema (P=0.001) were clinical signs which were significantly associated with. Renal function parameters were little elevated with elevated serum creatinine and blood urea nitrogen along with high level of SGOT and SGPT. Maximum number of patients were affected with 3 organ followed by 2 organ and 4 organ damage.

Conclusion: Treatment and diagnosis of acute febrile illness were associated with major complexity as there were diversity of etiological agents and similarity in clinical presentation. This study conclude that early referral can led to reduce the morbidity and mortality associated with acute febrile illness during monsoon and post monsoon period. Among acute febrile illness the commonest etiologies were dengue, malaria and leptospirosis and major killer due to renal involvements and respiratory.

KEYWORDS

Etiology, Acute undifferentiated febrile illness, complication, monsoon.

INTRODUCTION:

Illness of < 1 week duration with no identified source defined as acute febrile illness (AFI) but still remain poorly characterized in many parts of the world as described in several researchers [1,2]. Due to their similarity in symptoms Acute febrile illness group is difficult to differentiate [3]. In tropical regions among severely ill hospitalised patients 12% has been reported as mortality rate [4]. Acute febrile illness (AFI) can sometimes be a challenge for the treating physician as the initial diagnosis of whose cause is often presumptive. In a vast country like India acute febrile illness (AFI) aetiology may vary from region to region. Diagnosis of acute febrile illness (AFI) is a challenge because of scarce diagnostic tools, lack of focal signs and symptoms and similarity in clinical presentation. In a vast geographically different country like India without any organ-specific symptoms any common infection like urinary tract infection (UTI) may present as AFI. Global migration, the burgeoning population, climate change and Rapid urbanisation may all contribute to this problem [5-15].

There was a very small studies across country specially in eastern part of India like Bihar state. The main objective of the study was to assess etiology, clinical profile, signs and laboratory parameters significantly associated complicated acute febrile illnesses among inpatients in a tertiary care hospital during monsoon and post monsoon period.

MATERIALS & METHOD:

This was an observational study conducted in a tertiary care and research centre of Bihar. In this study we had included the case of patients who had admitted in the Tertiary care centre Hospital. with acute febrile illness during monsoon and post monsoon period. From clinical records collective data of demographic, clinical and laboratory were collected in predesigned proforma and analysed. Between organ specific complications and death associations were sought. Patients with autoimmune disorders, haematological malignancies, those on immunosuppressant and having prior documented cardiovascular abnormalities were excluded from the study. Enzyme-linked immunosorbent assay (ELISA) tests performed to detect the antigen involved like leptospira IgM, dengue IgM etc and PCR test was conducted is options were available to detect. This test results were retrieved from the care reports of the patients. Descriptive statistics were calculated for all variables. Multivariate logistic regression analyses were also carried out to investigate cardiometabolic comorbidities associated with general and central obesity. All statistical analyses were performed using SPSS software version 22.0 (SPSS Inc., Chicago, IL, USA) and P values < 0.05 were considered to be statistically significant.

RESULTS:

Total number of patients who were admitted in hospital with complicated febrile monsoon illness was 198 out of 672 who were diagnosed with the febrile illness including dengue, hepatitis E, malaria, leptospirosis and Enteric fever). 29.46% was the prevalence of acute febrile illness during monsoon and post monsoon period as came out in this study. Of the 198 cases studied 127 were dengue, 3 were hepatitis E, 29 were malaria, 34 were leptospirosis and 5 were mixed infections.

Table 1: Symptoms Of Patients With Complicated Febrile Illness

Symptoms	Dengue (N= 127)	Malaria (N =29)	Leptospirosis (N =34)	Hepatitis E (N=3)	Mixed infections (N=5)	Total (N= 198)	P value
Body ache	111 (87.4%)	22 (75.9%)	30 (88.2%)	2 (66.6%)	3 (60%)	168 (84.8%)	0.41
Headache	98 (77.2%)	20 (69%)	25 (73.5%)	1 (33.3%)	4 (80%)	148 (74.7%)	0.71
Coloured urine	35 (27.6%)	11 (38%)	23 (67.6%)	2 (66.6%)	2 (40%)	73 (36.9%)	0.003
Abdominal pain	62 (48.8%)	14 (48.2%)	15 (44.1%)	2 (66.6%)	3 (60%)	96 (48.5%)	0.95
Diarrhea	12 (9.4%)	6 (20.7%)	6 (17.6%)	3 (100%)	3 (60%)	30 (15.2%)	0.002

Rash	33 (26%)	4 (13.8%)	2 (5.8%)	0	1 (20%)	40 (20.2%)	0.031
Nausea / Vomiting	99 (78%)	17 (58.6%)	22 (64.7%)	3 (100%)	4 (80%)	145 (73.2%)	0.064
Shortness of breath	32 (25.2%)	14 (48.3%)	18 (53%)	1 (33.3 %)	1 (20%)	66 (33.3%)	0.001

As demonstrated in table 1 over all major common symptoms are body ache (84.8%), headache (74.7%), nausea or vomiting (73.2%) apart of other symptoms like coloured urine (36.9%), abdominal pain (48.5%), diarrhea (15.2%), rash (20.2%) and shortness go breath (33.3%). As per statistical correlation symptoms which were significantly associated with complications were shortness of breath (P=0.001), coloured urine (P=0.003), diarrhea (P=0.002) where as other symptoms were not significantly associated.

Table 2: Sign Of Patients With Complicated Febrile Illness

Sign	Dengue (N= 127)	Malaria (N= 29)	Leptospirosis (N=34)	Hepatitis E (N=3)	Mixed infections (N=5)	Total (N=198)	P value
Ascitis	11 (8.6%)	3 (10.3%)	3 (8.8%)	0	0	17 (8.6%)	0.82
Week pulse	43 (33.9%)	8 (27.6%)	11 (32.4%)	2 (66.6%)	1 (20%)	65 (32.8%)	0.65
Hepatomegaly	12 (9.4%)	3 (10.3%)	6 (17.6%)	0	0	21 (10.6%)	0.32
Splenomegaly	6 (4.7%)	2 (6.9%)	3 (8.8%)	0	0	11 (5.5%)	0.74
Pedal edema	12 (9.4%)	9 (31%)	10 (29.4%)	0	1 (20%)	32 (16.2%)	0.001
Tachypnoea	19 (15%)	10 (34.5%)	15 (44.1%)	0	0	44 (22.2%)	0.001

As demonstrate in table 2, rapid week pulse (32.8%) was most common sign after tachypnoea (22.2%). Tachypnoea (P=0.001) and pedal edema (P=0.001) were clinical signs which were significantly associated with.

Table 3 A: Laboratory Investigation Of Patients With Complicated Febrile Illness

Parameters	N(%)
Hemoglobin	
< 3 g%	1 (0.5%)
3 - 6.9g%	6 (3%)
7-9.9 g%	56 (28.3%)
10-12 g%	63 (31.8%)
> 12 g%	72 (36.4%)
Platelet count	
< 20,000	38 (19.2%)
20,000 - 40,000	45 (22.7%)
41,000 - 60,000	27 (13.6%)
61,000 - 80,000	21 (10.6%)
> 80,000	67 (33.8%)

Table 3 B: Laboratory Investigation Of Patients With Complicated Febrile Illness

Parameters	Average (Range)
Renal Function Test	
Blood Urea Nitrogen	27.7834 (4.30-198)
Serum Creatinine	1.9007 (0.50-15.48)
Liver Function Test	
SGOT (AST)	321 (3-5001)
SGPT (ALT)	169 (5-2774)

As demonstrate in table 3A, lesser haemoglobin or anaemia was in lesser number where as maximum number of patients were having haemoglobin level > 12g% (36.4%). Platelet count lesser than 20000 were observed in only 19.2% of patients where as maximum number of patients were having platelet count > 80,000. Table 3B reviled that renal function parameters were little elevated with elevated serum creatinine and blood urea nitrogen along with high level of SGOT and SGPT.

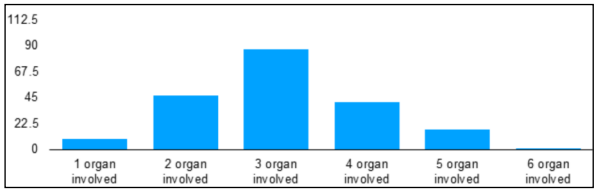

Figure 1: Organ Involvement

Figure 1 demonstrated the frequency of affection of organ system in complicated febrile illness. Maximum number of patients were affected with 3 organ followed by 2 organ and 4 organ damage (figure 1).

DISCUSSION:

In each during monsoon and even in post monsoon the number of patients who suffer from fever increases. In the current study dengue, hepatitis E, malaria, leptospirosis and Enteric fever were predominantly more as compare to other infections which in line with the previously documents studies [15,16]. It was also observed in current study that the male were more exposed with the infection as compared to female. The actual region is though uncertain but it can be presume that immigration of young male population to metropolitan cities like patna and males were more exposed to transmission of vector-borne diseases and mosquitoes with the predominantly outdoor occupational exposure [17,18]. Sharma et al and Malakar in Assam [19] and also Owais et al in Pakistan [20] was noticed like our study during the monsoon and post monsoon season an increased incidence of typhoid fever. In making an etiological diagnosis purely based on serological tests physicians need to be aware and more census. The frequency of affection of organ system in complicated febrile illness. Maximum number of patients were affected with 3 organ followed by 2 organ and 4 organ damage. Similar observation was also noticed by earlier researcher. As noticed in our study that among population of the 198 cases studied 127 were dengue, there were 19.2% patients presented with very low platelet count.

There were several limitations for this study. So many potential threats like hanta virus, spotted fever, chikungunya virus and scrub typhus were not routinely tested. Due to financial constraints a broader serologic testing was not able to be performed. The chance of under diagnosis of cases can not be ruled out because of study reports done by treating physician.

CONCLUSION:

Treatment and diagnosis of acute febrile illness were associated with major complexity as there were diversity of etiological agents and similarity in clinical presentation. This study conclude that early referral can led to reduce the morbidity and mortality associated with acute febrile illness during monsoon and post monsoon period. Among acute febrile illness the commonest etiologies were dengue, malaria and leptospirosis and major killer due to renal involvements and respiratory.

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