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THE INCIDENCE AND CLINICAL STATUS OF DENGUE INFECTION IN FEBRILE PATIENTS IN TERTIARY CARE HOSPITAL

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ABSTRACT
Objective: In this study our main goal is to evaluate the **i**ncidence and clinical status of dengue infection in febrile patients in tertiary care hospital. **Method**: This cross-sectional study was carried out at Tertiary medical college and hospital from June 2017 to June 2020. A total of 200 patient who came to either the inpatient or outpatient department and to either the medicine or pediatric unit at the participating hospital with fever $> 38°C$, or who reported a history of fever with onset within the preceding 10 days were included in the study. **Results**: During the study, among all febrile patients, 40% female patients had febrile illness and 35% of them were dengue positive. Where among 60% male febrile patients 65% patients were dengue positive. According to physical and laboratory status where in febrile patients mean systolic and diastolic blood pressure was 107 mm Hg and 67 mm Hg. Also, mean neutrophil and platelet count was 65% and 245,519/μL. Where as in dengue cases similar results were found. In dengue group mean systolic and diastolic blood pressure was 108 mm Hg and 68 mm Hg. Also, mean neutrophil and platelet count was 66% and 257,667 /μL. In dengue group, where among all cases fever (100%), headache (65%), myalgia (40%), gastro intestinal symptoms (32%) were common. Followed by 6% had loose motion, 5% had rash, 5% had low back pain, 21% had retro orbital pain, 25% arthralgia. **Conclusion:** Dengue in the urban and rural parts of Bangladesh is a year-round danger. A community dengue vaccination camp might be conducted and assessed as a feasible preventative approach as vaccine trials progress. Physician and health workers should be taught to handle dengue patients efficiently, using anti-biotics in a sufficient manner and with enough rehydration.

KEYWORDS: dengue infection, febrile patients, fever.

INTRODUCTION
Dengue is a prevalent transmissible virus of arthropodborne disease and one of Bangladesh's most prevalent causes of febrile disease.[1] DEN-1, DEN-2, DEN-3, DEN-4, and DEN-5 serotypes of dengue-borne viruses spread among people by infected mosquitoes are available in five different antigenic variants. They all lead to sickness in the tropical and subtropical climates across the world.[2]

One serotype infection is supposed to offer immunity for lifetime serotype-specific. But the antibody that exist can't give protection Opposed to another serotype. As a result, it is possible to do so.[3]

Heterogeneous secondary infection often linked to serious clinical events such as hemorrhagic dengue (DHF/DSS), seen as being connected to antibody reliable upgrade.[4]

Dengue outbreak is frequent in Bangladesh mostly during the annual monsoon precipitation between June and late September. Furthermore, tropical climates where Aedesaegypty populations are more stable contribute to a broad-based frequency of DENV infection.[5-6]

In this study our main goal is to evaluate the **i**ncidence and clinical status of dengue infection in febrile patients in tertiary care hospital.

OBJECTIVE
- To assess the **i**ncidence and clinical status of dengue infection in febrile patients in tertiary care hospital.

METHODOLOGY

Type of study: This was a cross sectional study.

Place and period of study: This study was conducted at Tertiary Medical College Hospital from May 2017 to May 2020.

Study population: A total of 200 patient who came to either the inpatient or outpatient department and to either the medicine or pediatric unit at the participating hospital with fever > 38°C, or who reported a history of fever with onset within the preceding 10 days were included in the study.

Method

The study physician and field assistant collected data on the total number of admitted patients and the total number of febrile patients per day in the inpatient departments of the medicine and pediatric units of the study hospitals. During the study we excluded presumed nosocomial cases as any patient who developed a new onset of fever > 38°C after 72 hours of hospitalization, and patients with symptoms of a focused infection, including cough with productive sputum; urgency, frequency, hesitancy during micturition; and cellulitis, abscess, boil, or local skin infection. According to our case definition, dengue positive cases diagnosed by NS1antigen and or antidengue IgM ELISA positive tests. NS1 and antidengue IgM ELISA negative cases were tested to detect chikungunya infection by anti-chikungunya antibody test.

RESULTS

In table-1 shows age distribution of the study group where in both group most of the patients belong to 10-14 years age group. The following table is given below in detail:

Table-1: Age distribution of the study group.

Age group	Febrile patients n=120, %	Dengue cases n=80, %
10-14 years	42%	47%
15 to 19 years	20%	20%
20 to 24 years	21%	19%
25 to 29 years	17%	14%

In figure-1 shows gender distribution of the study group where among all febrile patients, 40% female patients had febrile illness and 35% of them were dengue positive. Where among 60% male febrile patients 65% patients were dengue positive. The following figure is given below in detail:
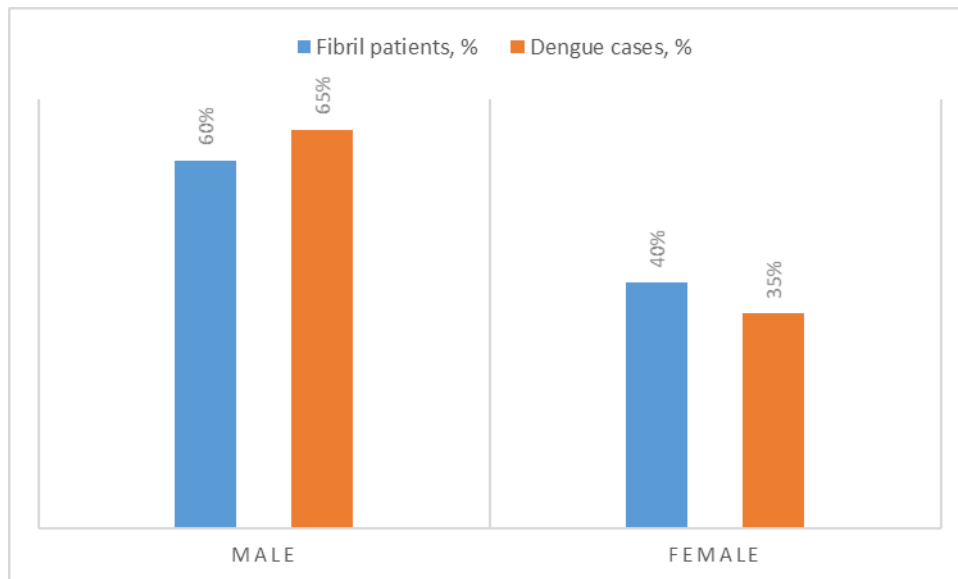

Figure-1: Gender distribution of the study group.

In table-2 shows distribution of the study group according to physical and laboratory status where in febrile patients mean systolic and diastolic blood pressure was 107 mm Hg and 67 mm Hg. Also, mean neutrophil and platelet count was 65% and 245,519/μL. Where as in dengue cases similar results were found. In dengue group mean systolic and diastolic blood pressure was 108 mm Hg and 68 mm Hg. Also, mean neutrophil and platelet count was 66% and 257,667 /μL. The following table is given below in detail:

Table-2: Distribution of the study group according to physical and laboratory status.

Mean physical examination result (range)	Febrile patients	Dengue cases
Pulse per minute	97 (44–180)	94 (62–160)
Respiratory rate per minute	25 (12–90)	26 (12–77)
Systolic blood pressure (mm Hg)	107 (60–230)	108 (80–145)
Diastolic blood pressure (mm Hg	67(20–120)	68 (40–90)
Temperature (°F)	100.3 (95.9–106.0)	100.4 (98–106)
Mean laboratory investigation result (range)	Febrile patients	Dengue cases
Neutrophils, %	65 (18–91)	66 (50–90)
Platelet count/µL	245,519 (15,000–600,000)	257,667 (150,000–600,000)
ESR (mm in first hour)	48 (5–180)	43 (10–105)

In figure-2 shows clinical Presentations observed among dengue cases where among all cases fever (100%), headache (65%), myalgia (40%), gastro intestinal symptoms (32%) were common. Followed by 6% had loose motion, 5% had rash, 5% had low back pain, 21% had retro orbital pain, 25% arthralgia. The following figure is given below in detail:
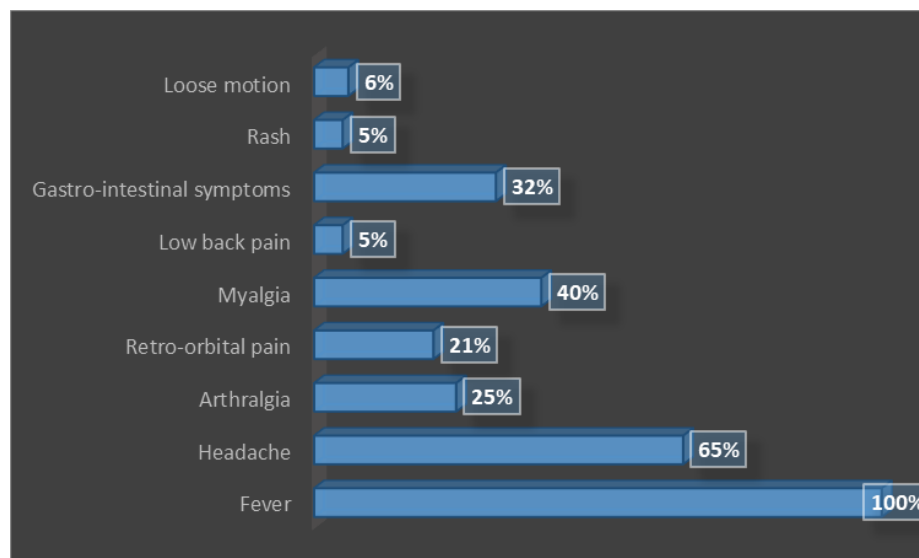
Figure-2: Clinical Presentations observed among dengue cases.

In table-3 shows associated outcomes where 79% recovered cases were found after two months and 5% dead cases were found. Also, 16% cases of residual illness were registered. The following table is given below in detail:

Table-3: Associated outcomes.

Associated outcomes	Dengue cases, mean/ %
Mean duration of illness in days (range)	20±5
Recovery after two months	79%
Death	5%
Residual illness	16%

DISCUSSION
During the study among all febrile patients, 40% female patients had febrile illness and 35% of them were dengue positive. Where among 60% male febrile patients 65% patients were dengue positive. This difference likely resulted from different health care utilization among male and female patients which is typical in South Asia.[7] The proportion of female febrile patients who were positive for dengue (8%) was similar to that of male febrile patients (11%), and the difference was not statistically significant ($P > 0.2$). Similarly in a study conducted in Bangladesh the proportion of female patients who were positive for dengue was 10% compared with 16% among males, a difference that was not statistically significant ($P > 0.16$).[8]

The clinical profile of dengue cases revealed that the most common presenting symptom was fever (100%) followed by headache (61.14%), Myalgia (44%) and arthralgia (23.14%). Retroorbital pain (20.29%), a cardinal feature of dengue fever, was seen in a small subset of our patients (20.29%). In the present study

among all cases fever (100%), headache (65%), myalgia (40%), gastro intestinal symptoms (32%) were common. Followed by 6% had loose motion, 5% had rash, 5% had low back pain, 21% had retro orbital pain. Most of the patients presented with classical dengue, while dengue haemorrhagic fever and dengue shock syndrome occurred in a minority group. Similar studies in and around Bangladesh have also demonstrated fever as being the most prevailing symptom presented.[9]

Another study found fever as the most common presentation (100%), followed by headache (90%), myalgia (81%), vomiting (56%) and abdominal pain (48%). Frequent clinical features including fever (100%), headache (91%), myalgia/arthralgia (85%), vomiting (64%), macular rash (55%) and bleeding manifestation (46%) (melena and bleeding gums) as found in another study.[10]

In one study reported in their followed-up that, 55 (80%) dengue-positive patients for a median of 66 days and a range of 56–88 days after blood collection or for a median of 70 (range = 60–98) days after disease onset. Of these patients, 45 (82%) recovered without any residual illnesses, and 9 (16%) mentioned continuing symptoms of fever, headache, joint pain, or jaundice. [11] Where as in our study, 79% recovered cases were found after two months and 5% dead cases were found. Also, 16% cases of residual illness were registered.

CONCLUSION
Dengue in the urban and rural parts of Bangladesh is a year-round danger. A community dengue vaccination camp might be conducted and assessed as a feasible preventative approach as vaccine trials progress. Physician and health workers should be taught to handle dengue patients efficiently, using anti-biotics in a sufficient manner and with enough rehydration.

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