RESEARCH ARTICLE
PROFILE OF DENGUE FEVER CHILDREN IN OUR SET UP.

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Abstract

Dengue fever is caused by several Arthropods borne viruses and is characterized by phasic fever, myalgia or arthralgia, rash, leucopenia and may be lymphadenopathy.

Dengue hemorrhagic fever (DHF) is a severer often fatal febrile disease characterized by abnormal capillary permeability, thrombocytopenia, abnormality of homeostasis, and in severe cases protein losing shock syndrome (Dengue shock syndrome). There are at least four distinct antigenic types of dengue virus; member of family Flaviviridae of arthropod borne virus (arbo viruses) which cause identical febrile disease with rash. The four virus types which are designated DEN 1 to DEN 4 are antigenically similar. Infection with one serotype confers immunity to that serotype (1,2). Dengue viruses are transmitted by mosquito Aedes Aegypti and in certain parts by day time biting mosquito surviving on fresh stored water.

Severe dengue occurs where multiple types of dengue viruses are simultaneously affecting or second time infection with different serotype occurs (3).

Dengue virus’s strains circulating in South East Asia since 1983 and are associated with particularly severe clinical syndrome characterized by encephalopathy, hypoglycemia, markedly elevated liver enzymes and occasionally Jaundice. In recent years morbidity due to dengue has increased in pediatric population affecting school attendance and well being of child. Hence present study was conducted to analyse profile of dengue pediatric patients where paradigm is shifting from patient’s requiring more of critical care(1,2,4).

Material and Methods:-
In present study 85 children admitted to Pediatric wards of Government Medical College and Rajindra Hospital Patiala with signs and symptoms of dengue fever with age ranging from <1 year to 15 years were chosen as subjects of study for inclusion in study. For the purpose of study children were subgrouped according to the gender and different age groups. Less than 1 year, more than 1 year to 5 years, more than 5 years to 10 years and more than 10 years to 15 years respectively.
Name, age, gender, address, anthropometry, serial vitals record, general physical examination, systemic examination, serial record of temperature, serial record of blood pressure, clinical presentation, treatment modalities as per guidelines, duration of treatment, Age Group, lab investigation for NS1. Dengue serology, complete blood count, peripheral blood film, serial platelet counts, hepatic enzymes, Widal test, blood and urine cultures, renal profile were recorded on pre-tested, pre-designed performa and data so obtained was analysed for the purpose of study.

All cases diagnosed with Malaria, Enteric Fever, Pneumonia or Meningitis after investigation were excluded from study.

**Results and observation:**

85 children presenting to Pediatric wards with fever, body aches and rash were diagnosed with Dengue fever upon clinical examination and serology. Out of 85 children, 50 (59%) were male and 35 (41%) were female.

Distribution of children as per age group – only one child (1.1%) presented in the age group of less than one year, 14 (16.4%) children presented in the age group of less than 5 years, 18 (21.3%) children presented in the age group of less than 10 years, 52 (61.1%) children presented in the age group of more than 10 years up to 15 years. As described in Table 1 & 2

| Table no.1: Distribution of children as per gender |
|-----------------------------------------------|
| Gender          | No. of children | Percentage |
| Male            | 50              | 59 %       |
| Female          | 35              | 41 %       |
| Total           | 85              | 100 %      |

| Table no.2: Distribution of children as per different age groups |
|---------------------------------------------------------------|
| Age group          | No. of cases | Percentage |
| <1 year            | 1            | 1.1 %      |
| >1 yr-5 yr         | 14           | 16.4 %     |
| >5 yr-10 yr        | 18           | 21.3 %     |
| >10 yr-15 yr       | 52           | 61.2 %     |

| Table no.3: Distribution OF Children as per signs and symptoms |
|---------------------------------------------------------------|
| Pyrexia            | No. of cases | Percentage |
| Grade of pyrexia   | Mean temp 102.5±1°F |
| Duration of pyrexia| 120±2 hrs   |
| Table no.4         |
| Rash               | No. of cases | Percentage |
| Presence of rash   | n=80         | 94%        |
| upper and lower limbs | n=48      | 56.4%      |
| Face               | n=11         | 12.9%      |
| Abdomen and chest Edema | n=21, number n=34 | 24.7% 40% |
| Ascitis            | Number n=12  | 14%        |
| Pleural effusion   | n=2          | 0.2%       |
| Headache           | n=75         | 88.2%      |
| Myalgia and Arthralgia | n=76    | 89.4%      |
Table no.5:- Distribution of children as per systolic blood pressure on admission.

| Systolic Blood pressure | Total number | Percentage |
|-------------------------|--------------|------------|
| <10th centile           | n=4          | 7%         |
| <25th centile           | n=8          | 9%         |
| <50th centile           | n=10         | 11%        |

Table no.6:- Profile of hepatic enzymes and platelet count

| Elevated Hepatic enzymes | Total n=85 | Percentage |
|--------------------------|------------|------------|
| Platelet count           | n=22       | 25.8%      |
| <50,000                  | n=20       | 23.5%      |
| 50,000-75,000            | n=22       | 25.8%      |
| 75,000-100000            | n=23       | 27%        |
| 100000-1,50000           | n=20       | 23%        |

Table no.7:- Distribution of children as per response to treatment

| Duration of fluid therapy | Number of children, n=40 | Percentage |
|---------------------------|---------------------------|------------|
| 96hrs                     | n=32                      | 37.6%      |
| 120 hrs                   | n=13                      | 15.2%      |
| Colloid dextrantherapy     | n=11                      | 13%        |
| Platelet transfusion      | n=80                      | 94%        |

As depicted in table no. 3,4,5,6. Average elevation of temperature was 102.5±1°F and mean hours of duration of fever was 120±2 hrs Rash was observed in 80 (94%) children, on upper and lower limbs in 48 (56.4%) children, on face in 11 (12.9%) children, on abdomen & chest in 21 (24.7%) children.

Edema was observed in 34 (40%) children, Ascitis in 12 (14%) children, pleural effusion in 2 (0.2%) children. Systolic bp measured on admission for <10th centile in 4(7%) children, for <25th centile in 8(9%) children, for <50th centile in 10(11%) children.

Elevated hepatic enzyme was seen in 22(25.8%) children.

Thrombocytopenia was seen in 100% of cases out of which platelet count <50,000 in 20(23.5%) children, 50,000-75,000 in 22(25.8%) children, 75,000-100000 in 23(27%) children, 1,00000-1,50000 in 20(23%) children.

children were observed 4 hourly for vitals, blood pressure, thereafter 8 hourly daily observation for new appearance of rash or petechiae.

All the children were prescribed the fluid therapy, sponging, paracetamol, colloid dextran administration and platelets transfusion in babies who did not respond to fluid therapy alone or thrombocytopenia was below critical level.

Children were discharged upon achieving normothermia for 48 hrs, platelets > 1.5 lacs and normtension. Average loss of school absence as calculated on discharge as ten days. Follow up revealed absence from school for another five days in fifty percent of children.

Discussion---Global burden of dengue fever has increased in the recent decade(5) hence the relevance of our study. Total 85 cases were analysed for purpose of study. 58.8% of children were males while 41.1% were females which is almost consistent with other studies(6) slightly increased number of reporting of male children could be due to gender preference. Study was conducted in breeding season of mosquitoes similar to other studies(7). In our study fever was present in all children while Headache with Myalgia & Arthralgia were the most common complaints in accordance with previous study(7). Bleeding in dengue is multifactorial. Subcutaneous bleed in form of purpuric rash was present as common presentation and involvement of larger did not correlate well with decreasing platelet count(8) as other factors which lead to bleeding are thromboasthenia, fibrinogen consumption and...
vasculopathy(9). Tourniquet test was found to be negative in almost all the children which is in contrast to other studies(8). Negative tourniquet test may be due to darker skin colour of Indian children. Other critical clinical findings of hypotension, pleural effusion, respiratory distress were consistent with other studies(7,8). In our study severity of thrombocytopenia was observed in severe dengue in our study(10). Hepatic enzymes were raised in one third of cases (7,8). There was no mortality due to disease as compared to previous studies which may be attributed to seeking early treatment and early intervention.

**Conclusion:**
Dengue fever is cause of significant morbidity. Early recognition and intervention prevents mortality.

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