ABSTRACTS FROM CURRENT LITERATURE

Clinical spectrum and predictors of severity of dengue among children in 2019 outbreak: a multicenter hospital-based study in Bangladesh

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Background: The mosquito-borne arboviral disease dengue has become a global public health concern. However, very few studies have reported atypical clinical features of dengue among children. Because an understanding of various spectrums of presentation of dengue is necessary for timely diagnosis and management, we aimed to document the typical and atypical clinical features along with predictors of severity among children with dengue during the largest outbreak in Bangladesh in 2019.

Methods: We conducted a cross-sectional study between August 15 and September 30, 2019. in eight tertiary level hospitals in Dhaka city. Children (aged < 15 years) with serologically confirmed dengue were conveniently selected for data collection through a structured questionnaire. Descriptive, inferential statistics, and multivariable logistic regression were used to analyze data.

Results: Among the 190 children (mean age 8.8 years, and male-female ratio 1.22:1) included in the analysis, respectively 71.1 and 28.9% children had non-severe and severe dengue. All children had fever with an average temperature of 103.3 ± 1.2 F (SD). Gastrointestinal symptoms were the most common associated feature, including mostly vomiting (80.4%), decreased appetite (79.5%), constipation (72.7%), and abdominal pain (64.9%). Mouth sore, a less reported feature besides constipation, was present in 28.3% of children. Atypical clinical features were mostly neurological, with confusion (21.3%) being the predominant symptom. Frequent laboratory abnormalities were thrombocytopenia (87.2%), leucopenia (40.4%), and increased hematocrit (13.4%). Age (AOR 0.86, 95%CI 0.75–0.98, $p = 0.023$), mouth sore (AOR 2.69, 95%CI 1.06–6.96, $p = 0.038$) and a decreased platelet count ($< 50,000/mm^3$) with increased hematocrit ($> 20\%$) (AOR 4.94, 95%CI 1.48–17.31, $p = 0.01$) were significant predictors of severity.

Conclusions: Dengue in children was characterized by a high severity, predominance of gastrointestinal symptoms, and atypical neurological presentations. Younger age, mouth sores, and a decreased platelet with increased hematocrit were significant predictors of severity. Our findings would contribute to the clinical management of dengue in children.

Early Predictors of Mortality in Children with Severe Dengue Fever: A Prospective Study

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Objective: The aim of the study was to identify early predictors of mortality in children with severe dengue fever admitted to pediatric intensive care unit (PICU).

Materials and Methods: All consecutive children with laboratory-confirmed severe dengue fever were enrolled in this prospective observational study. Besides demographic data, disease severity and organ dysfunction scores, laboratory investigations and interventions are done in PICU were recorded and analyzed.

Results: During the study period of 42 months, 172 patients with dengue fever were admitted to PICU. A total of 78 (45.3%) patients with severe dengue fever were included and analyzed. There were 20 (25.6%) deaths. There were significant differences in disease severity and organ dysfunction scores, transaminases, blood lactate level and serum creatinine between survivors and nonsurvivors. A significantly higher number of nonsurvivors required interventions in first 24 hours of admission. Platelet counts (P value 0.22) and hematocrit (P value 0.47) were not statistically different in 2 groups. There was a significantly high vasopressor-inotrope score (VIS) (<0.001) and positive fluid balance >10% (0.002) in nonsurvivors. Multivariate stepwise logistic regression analysis identified serum glutamic pyruvic transaminases (≥284 IU/L; odds ratio [OR] 1.002, 95% confidence interval [CI]: 1.001-1.003), blood lactate level (≥2.73 mmol/L; OR 2.08, 95% CI: 1.354-3.202), Pediatric Risk of Mortality score at 12 hours (e"14.5; OR 1.35, 95% CI: 1.077-1.693), VIS (e"22.5, OR 1.129, 95% CI: 1.059-1.204) and positive fluid balance >10% (OR 22.937, 95% CI: 2.393-219.84) at 24 hours of admission as independent predictors of mortality.

Conclusion: Disease severity, hyperlactatemia at admission, need for multiple vasoactive drugs and positive fluid balance are predictors of mortality in severe dengue infection in children admitted to PICU.

Dengue Management in Triage using Ultrasound in children from Cambodia: a prospective cohort study

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Background: Dengue is a mosquito-borne viral infection with increasing global prevalence. It is endemic in more than 100 countries, with a heavy burden in Asia. Ultrasound findings including gallbladder wall thickening, ascites, and pleural effusions secondary to plasma leakage have been described in dengue. We aimed to determine if the presence of point-of-care ultrasound findings early in suspected dengue could predict clinical worsening in ambulatory pediatric patients.

Methods: We did a prospective, single-blinded, observational cohort study at a children's hospital in Siem Reap, Cambodia during periods of dengue outbreak. Ambulatory patients were screened and children ages > 3 month and d" 16 years with suspected acute, non-severe dengue were enrolled. Subjects had chest and abdominal ultrasound exams. Independently, subjects were evaluated by a blinded physician who determined a treatment plan as per usual practice. Follow-up was conducted 7-10 days after the initial visit. Analysis of ultrasound findings was performed to determine their relationship with outcome measures including need for unplanned hospital visits or admissions.

Findings: A total of 2,186 children were screened during periods of national dengue outbreak in Cambodia in consecutive years 2018-2019, and 253 children met eligibility criteria. Results showed patients with gallbladder wall thickening (> 3·0 mm) who were discharged had a significantly more likely need for unplanned visit or hospitalization than those with normal gallbladder wall, 67% (95% CI 44-84) versus 17% (95% CI 12 - 24), p < 0.0001. Subjects with any abnormal ultrasound finding were more likely to be directly admitted versus discharged upon initial presentation, 62·2% (95% CI 46.1 - 76.0) versus 19.5% (95% CI 14.8 - 25.4), p < 0.0001.

Interpretation: Point-of-care ultrasound findings, particularly gallbladder wall thickening, in suspected early dengue can help predict disease progression in ambulatory patients. Ultrasound has potential to help guide management of suspected dengue patients and resource management during periods of dengue outbreak.

Clinical Characteristics of COVID-19 Among Hospitalized Children in Bangladesh: A Multi-Center Study

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Background: Initially few cases of COVID19 in children be-ing reported but the number of infected children identification isincreasing day by day. In Bangladesh 3% of children <10 yearswere identified as COVID-19. Though over 90% of the cases weremild or moderate in nature but many of them required hospitaladmission.

Objective: To observe the Clinical characteristics of COVID-19 among hospitalized children in Bangladesh.

Methods: This retrospective multicenter study was conductedfrom May 2020 to November 2020 in Dhaka Shishu (Children)Hospital (DSH), Dhaka Medical College Hospital (DMCH),Mugda Medical College Hospital (MMCH) and Kurmitola Gen-eral Hospital (KGH). Data were collected from hospital records.Clinical characteristics laboratory tests and radiography findingsof COVID-19 infected children were noted. Data were analyzedby using SPSS version 22.

Results: Among 553 COVID-19 hospital admitted cases malewere 58.77% and male female ratio was 1.43:1. Children of allages were affected and 30.74% were <1 year of age, 25.68% were1-5 year belong to age group, 21.34% belongs to 6-10 years and22.24% belongs to 11-15 years' age group. Among COVID-19children 41.41% admitted with mild to moderate symptoms,33.98% with severe symptoms and 20.61% with critical symp-toms. Regarding clinical characteristics majority of the childrenadmitted with fever (94.92%), cough (79.69%), dyspnea (59.77%)and desaturation (62.11%). Regarding investigation findings leu-kopenia was present in 41.02%, lymphopenia in 41.79%, raisedCRP in 28.91%, ground glass opacity in chest X-ray in 3.52%,local patchy shadow in 46.88% and bilateral patchy shadow in28.52% cases. Overall mortality was 4.52%.

Conclusion: This study found that large number of hospitalized children with COVID-19 presented with severe and criticalsymptoms. Majority of the children admitted with fever, cough,dyspnea and desaturation. Leukopenia, lymphopenia, raised CRP,localized patchy shadow and bilateral patchy shadow in CXR werealso common. Mortality was 4.52% among hospitalized childrenwith COVID-19.