

rhage (9.2%), and multiple sites bleeding (11.7%) were noted frequently. The mean platelet count noticed in DF, DHF, and DSS were  $[50 \pm 27.4, 46 \pm 31.1, 42 \pm 26.0 \times 10^3/\text{mm}^3]$  respectively. In DF, DHF, and DSS, the mean serum bilirubin was recorded as the mean values for  $0.8 \pm 0.27, 0.9 \pm 0.3, 0.9 \pm 0.5 \text{ mg/dl}$  ( $p = 0.9$ ) respectively were  $123 \pm 88.5, 120 \pm 93, 112 \pm 37 \text{ IU}$ , ALT was  $108 \pm 48, 109 \pm 70, 107 \pm 36 \text{ IU}$  ( $p = 0.01$ ), and for serum alkaline phosphatase (SAP) mean values were  $138 \pm 53, 124 \pm 52, 153 \pm 26 \text{ IU}$  ( $p = 1.7$ ). All patients recovered, except one who succumbed due to an intracranial hemorrhage.

**Conclusions:** Fever, rash, abdominal pain, bleeding manifestation, and thrombocytopenia were the predominant features. Significant elevations in transaminases along with normal serum bilirubin and SAP values were observed. Prompt diagnosis and judicious therapy is the key in managing an outbreak in an emergency department.

**Keywords:** dengue fever; hospital; India; outbreaks; clinical presentations  
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### (235) Ultrasonography as a Diagnostic Marker in Dengue and Other Viral Febrile Illnesses Presenting with Thrombocytopenia

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**Purpose:** This study assessed sonographic findings and evaluated its diagnostic efficacy in dengue and other viral febrile illnesses with thrombocytopenia.

**Methods:** The study was conducted in the Department of Radiology at Yashoda Hospital, a 250 bed healthcare center in the city of Ghaziabad, India between September and October 2006 during the outbreak of dengue in the region. Patients with short febrile illness with thrombocytopenia undergoing sonography were included. Those with known hematological disorders or systemic illnesses causing thrombocytopenia were excluded.

**Results:** Of the 169 patients, 56 (33.1%) were IgM positive, 51 (30.2%) for IgG, and 34 (20.1%) were positive for both antibodies. The mean platelet count was  $53,000/\text{mm}^3$ . Gallbladder edema was seen in 122 (72.2%), hepatomegaly in 78 (46.2%), ascites in 126 (74.6%), splenomegaly in 66 (39.1%), right pleural effusions in 48 (28.4%), pericholecystic fluid in 63 (37.3%), pericardial fluid in four (2.3%) and perinephric fluid collection in 24 (14.2%) patients. Mean platelet counts were significantly lower in sonographically positive than in negative patients ( $51,510$  and  $66,280/\text{mm}^3$ , respectively;  $p = 0.000$ ). A poor correlation was observed between sonographic evidence of disease and serological markers of dengue and the platelet counts (Pearson's correlation coefficient 0.365, and 0.064 respectively). Sonographic findings appeared as early as three days of pyrexia and complete resolution of the findings was the rule.

**Conclusions:** This study reiterates the fact that ultrasound is an important diagnostic marker for dengue and other viral febrile illnesses with thrombocytopenia. Since it is inexpensive and noninvasive, it may reduce the diagnostic utility of serological tests.

**Keywords:** dengue; diagnostic marker; thrombocytopenia; ultrasonography, viral febrile illnesses

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### (236) Laboratory Profile of Patients Presenting with Dengue Fever in an Emergency Department at an Urban Tertiary Care Hospital during the Outbreak in 2006

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**Objective:** The aim of this study was to assess the clinical profile of patients presenting to the emergency ward of an urban tertiary care hospital with dengue fever during the 2006 outbreak.

**Methods:** The study was conducted in the Emergency Department at the All India Institute of Medical Sciences in New Delhi between August and October 2006. Information from all patients presenting with a short febrile illness and found to have thrombocytopenia were included in the study.

**Results:** Of the 3,707 cases assessed, 2,834 (76.4%) were males; there was a similar distribution of other parameters between both sexes. The mean ( $\pm$ SD) age was  $25.5 \pm 12.83$  years; the mean hemoglobin concentration was  $12.5 \pm 3 \text{ g/dL}$ , the mean hematocrit was  $36.9 \pm 8.3$  the mean platelet count was  $50,875 \pm 22,090/\text{cmm}$ ; and the mean total leukocyte count was  $6,392 \pm 3,778/\text{cmm}$ . During the outbreak, 15 (1%) patients died due to dengue hemorrhagic fever and shock. The mean age of the patients who succumbed to the illness was  $33.6 \pm 16.13$  years compared to  $25.48 \pm 12.8$  years in those who recovered; ( $p = 0.072$ ). The platelet counts of the patients who died were significantly lower ( $39,571 \pm 18,923/\text{cmm}$ ) than those who recovered ( $50,918 \pm 22,093/\text{cmm}$ ) ( $p = 0.043$ ).

**Conclusions:** Young males were noted to be more susceptible to dengue fever during the recent outbreak of this disease in parts of northern India, but the illness was more severe among older individuals. Lower platelet counts may pre-empt mortality.

**Keywords:** dengue fever; emergency department; India; mortality; thrombocytopenia

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### (237) Possible Disaster from Industrial Emissions and How to Control Them

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**Objectives:** To establish risk assessment for organic solvents in a printing industry, and to develop control measures for a possible environmental pollution disaster.

**Methods:** The study was conducted in a printing industry with about 400 employees in a highly populated community. Monitoring of ambient air for various organic solvents was conducted. The industry as the target area uses solvents such as ethyl acetate (EAC), methyl ethyl ketone (MEK), ethanol, and isopropyl alcohol (IPA) for printing and laminating plastics.

**Results:** Workers were exposed to high concentrations of solvents that may cause damage, such as cancer or repro-