

## Study of cardiac involvement in 200 cases of dengue fever in Shanti Infectious Diseases Clinic Vadodara, Gujarat, India

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**Objective:** This study was done to find out the prevalence of cardiac involvement in dengue fever in patients presented to our hospital and to find out the correlation of cardiac manifestations to warning signs and severe dengue hemorrhagic fever/dengue shock syndrome (DHF/DSS).

**Methods:** The one year descriptive study was undertaken at Shanti Infectious Diseases Clinic and Metro Hospital and Research Institute in Vadodara, Gujarat, India. Two hundred patients aged 14 years or more with positive dengue serology were interviewed and examined. ECG was done for all patients and selected patients underwent echocardiography evaluation and troponin testing. The data was analyzed using statistical significance test. Results: Sixty six (33%) patients had warning signs, 116 patients had one or other warning sign and 71 (35.5%) patients had severe dengue hemorrhagic fever/dengue shock syndrome. The minimum pulse rate was 34 beats/minute. The most common cardiac abnormalities noted were rhythm abnormalities of which the commonest was sinus bradycardia found in 66 (33%) patients and 45 (22.5%) patients with AV block. In echocardiography the mean ejection fraction was 47.05 (3.8%). In 71 patients with dengue shock syndrome the mean ejection fraction was 39.63%, 57 (28.5%) patients had myocarditis with ejection fraction below 35% and global hypokinesia. Echocardiography was repeated in these 71 patients after treatment and three weeks of follow up and ejection fraction was 50% and global hypokinesia was also improved and ECG changes reverted to normal after three weeks follow up. Thus acute reversible cardiac insult was observed in dengue shock syndrome in 71 (35.5%) patients and it could be responsible for hypotension/shock seen in these cases. Further studies are required to establish pathogenic mechanism of cardiac dysfunction in dengue shock syndrome. There was statistically significant correlation between cardiac manifestations and all warning sign except persistent vomiting. 71(35.5%) patients with dengue shock

syndrome were having mucosal bleed, fluid accumulation, respiratory distress, bradycardia with hypotension was found to have significant correlation with cardiac manifestations. Cardiac manifestation in the form of myocarditis was observed in 57 (28.5%) patients with positive correlation with severity of dengue fever defined as by WHO criteria.

**Conclusions:** The most common cardiac manifestation noted were transient rhythm abnormalities of which sinus bradycardia was seen in 66 (33%) patients, 45 (22.5%) patients had AV block and 71 patients (35.5%) were having dengue hemorrhagic fever/dengue shock syndrome of which 47 (35.5%) patients had myocarditis. Patients with dengue fever are at high risk of developing myocarditis and rhythm disturbance and therefore require a close monitoring.