

**Original article:**

## **ECG Changes in Dengue Fever: An Observational Study**

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### **ABSTRACT:**

**Aims and Objective:** To determine electrocardiographic changes in serologically confirmed cases of dengue fever.

**Methods:** This is a retrospective observational study conducted at S.P Medical College and Associated Groups Hospital, Bikaner Rajasthan. Cases were selected after taking into account the inclusion and exclusion criteria from serologically confirmed Dengue cases. Patients were examined and ECG was done at the time of admission and discharge.

**Conclusion:** In a patient of fever with ECG changes such as relative bradycardia or ST-T changes; diagnosis of dengue should be kept in mind.

**Keywords:** Dengue, Bradycardia.

### **INTRODUCTION**

Dengue fever is endemic in >100 countries.<sup>1</sup> Dengue virus (DENV), the most important arthropodborne diseases is transmitted to humans by mosquitos of the Aedes family<sup>2</sup> and has resulted in considerable morbidity & mortality in India. So it is essential to early pick up cases of dengue fever and monitor and treat them. In resource poor settings such as rural areas, ECG finding can be used as a diagnostic tool in patients with relevant clinical findings to pick up cases of dengue fever. In our case series, we have tried to pick up ECG changes with emphasis on relative bradycardia in serologically proven cases of dengue fever.

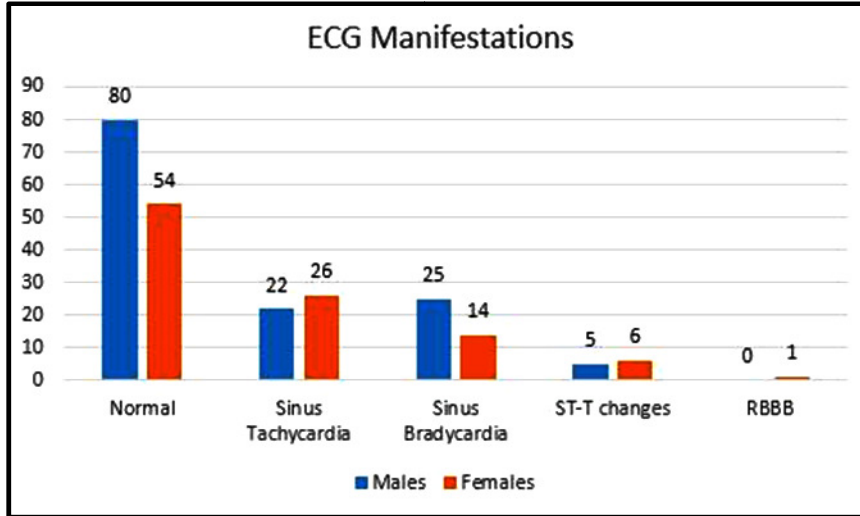
### **MATERIALS AND METHODS**

It was a single centre retrospective observational study. Serologically confirmed cases of dengue fever who were admitted in S.p. medical college Bikaner Rajasthan in period between June 1, 2016 to May 30, 2017 were selected for the study. Following were the exclusion criteria: Patients with known pulmonary, cardiac or thyroid disease; Age <18 years or >60 years; Patients on medications affecting heart rate such as  $\beta$  agonists,  $\beta$  antagonists, Digoxin, Theophylline and derivatives, calcium channel blockers.

ECG findings at the time of admission and discharge were taken into consideration for all the patients fulfilling our criteria.

## RESULTS

After considering exclusion criteria, total 221 patients of Dengue fever were selected. Out of 221 patients, 127 were males and 94 were females. 134 had Normal sinus rhythm, 48 patients had sinus tachycardia and 39 had sinus bradycardia. 12 patients had additional changes of which 11 patients had nonspecific ST-T changes and 1 patient had RBBB. All these 12 patients showed reversal of ECG changes at the time of discharge.



## DISCUSSION

Cardiac function is affected in Dengue Fever in multiple ways; out of which bradycardia is most prominent<sup>3</sup> and often overlooked. Other changes are in the form of reversible ST-T changes<sup>4,5</sup> and reversible RBBB.<sup>5</sup>

Most of symptomatic Dengue infections are relatively benign and very few develop into serious clinical complications as bleeding, organ dysfunction and increased capillary permeability causing hypovolemic shock. Knowing the extent of cardiac involvement in the management of dengue patients can be really helpful.<sup>6</sup>

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