Study of Prevalence of Dengue cases in Telangana Population

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Abstract

Background: Dengue is the most rapidly spreading vector – borne viral disease in India and worldwide at any age group leads to morbidity and mortality if neglected.

Method: Out of 550 patients of PUO aged between 20 to 50 years 230 were confirmed serologically positive. Blood samples were tested with Rapid card test for qualitative detection of test for Igm and IgG antibodies by Pan-Bio Dengue capture.

Results: Out of 230, 135 (58.6%) male and 95 (41.3%) female. In the 2018 to 19 June 140 (25.4%) and June 2019 to 20 90 (16.4%) were serologically confirmed positive.

Conclusion: These studies highlight the incidences regionally we need to understand incubation period according to serotype and by mosquito species. As it is fast growing disease population's density and migration should be the future risk factor.

Keywords: PUO (pyrexia of unknown origin) Rapid card test, Elisa test, DENV, Telangana.

Introduction

Dengue is the rapidly spreading vector-borne viral disease globally with an increasing number of areas at risk [1]. Reliable estimates of burden of dengue are important to inform policy and research. However, quantifying the true burden globally remains elusive because surveillance systems are notoriously poor at capturing all symptomatic dengue infections, resulting in gross under-reporting. It was 96 billion globally in 2010 [2] particular incidences were higher in India. In the same year 12484 cases were reported to WHO another mismatch reports were also noted in India and globally [3] overall 43.35 % to 54% of dengue cases reported in India [4]. The results were similar with neighbouring Bangladesh [5] which predicts more risk or burden to India and worldwide. Hence attempt is made to evaluate the incidence of dengue cases.

Material and Method

550 patients, aged between 20 to 50 years admitted in Medicine department of MediCiti Institute of Medical Sciences, Ghanpur Village, Medchal Mandal, Medchal Malkajgiri (dist) – 501401, Telangana were studied.

Inclusive Criteria: Out of 550 patients with pyrexia with un-known origin (PUO), 230 were confirmed Dengue was selected for study.

Exclusion Criteria: Patients suffering with viral fever, enteric and positive for Malaria parasite (MP) were excluded from study.

Method: Blood samples of admitted patients were received in our hospital laboratory serum was separated from Blood samples and transferred into labelled sterile vials. These samples were used to confirm the diagnosis of Dengue fever with serological test and later stored at 4ºC. All the serum samples were tested by

(1) **Rapid card test**: It is a rapid solid phase immune chromatography test for the qualitative detection of dengue NSI Ag and differential detection of Igm and IgG antibodies to dengue virus from patents serum virus.

2) **Elisa test**: All the serum samples were tested for Igm and IgG antibodies by "Pan-Bio Dengue capture Elisa test. The duration of study was June-2018 to June-2020 (two years).

Statistical analysis: The suspected and positive genders were classified with percentage. The statistical data was carried out in SPSS software.

Observation and Results

Table-1: Duration of study of dengue fever June-2018 to June-2019 out of 290 PUO patients 140 (25.4%) were serologically positive. During July-2019 to june-2020 out of 260 PUO patients, 90 (16.4%) were serologically positive.

Table-2: Sex wise distribution of serologically positive 135 (58.6%) male, 95 (41.3%) were female.

Table-3: The present results were compared with previous studies of other states of India.

Discussion

The present study of prevalence of Dengue cases in Telangana. The Duration study was from Jan-2018 to Jan-2019 out of 240 PUO patients 140 (25.4%) were serologically positive, from July-2019 to june-2020 out of 260 PUO 90 (16.4$) were serologically positive (Table-1) 135 (58.6%) males, 95 (41.3%) were female patients (Table-2). The present study was compared with other states of India (Table-3). These findings are more or less in agreement with previous studies [6][7][8].

The first dengue vaccine CYD-TDV (Dagvaxia) developed by sanofi posteur has now been recommended for use among individuals aged between 9-45 years [9]. WHO recommended introduction of this vaccine with high burden of disease, as indicated by dengue sereo prevalence of 70% or higher. This recommendation was revised in 2018 with pre-vaccination screening and vaccination of people with post evidence of infection as the preferred strategy. If this, strategy in not feasible, vaccination without individual screening could be considered in areas with a sereo-prevalence of 80% or higher by the age of 9 years [10]. In India

dengue sereo-prevalence was higher in urban than rural areas and these findings are consistent across all religions. Although the dengue burden in India as the stage is lower than that of most other south East Asian countries their data show that, dengue does pose a substantial public health risk. Such evidences should acts as an impetus for India to invest more in addressing the dengue burden. At the same time, it is important to study related flaviviruses, such as zika virus, which could also potentially have a devastating effect in India.

Some studies have reported that daily temperature variations may play major role in dengue virus transmission and vector pathogen interactions [11]. Hence understanding of exotherm ecology has to be improved, which gives novel ideas on how to quantify the impact of anthropogenic climate change on post and disease risk.

Summary and Conclusion

The present study of prevalence of Dengue cases in Telangana indicates that, dengue continues to be an important public health problem in India. There is a need to initiate well planned community based cohort studies representing different geographic regions of the country in order to generate reliable estimates of age-specific incidence of dengue fever in India. As such studies are cost-intensive hence state and central government must align to generate reliable data to study the relative proportion of primary and secondary infections. Moreover awareness and preventive measures has to be given top priority.

Table – 1

Study of Dengue fever

Duration	No. of suspected (550)	Serological positive with percentage (230) (41.8%)
June-2018 to June-2019	290	140 (25.4%)
Junly-2019 to June-2020	260	90 (16.4%)

Table – 1
Study of Dengue fever
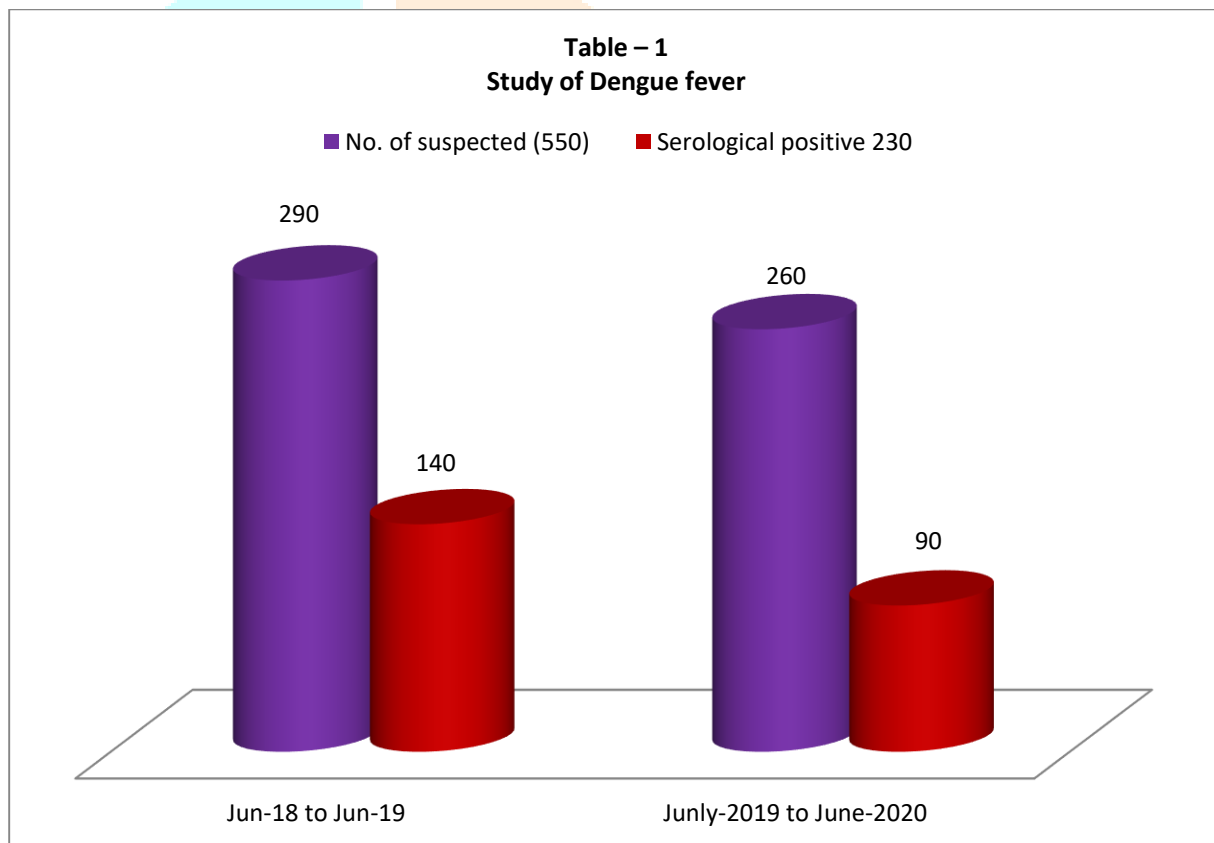
Table – 2

Sex wise distribution of serological positive with percentage

No. of Serological positive (230)	Male	Female
	135	95
Percentage	58.6%	41.3%

Table – 2
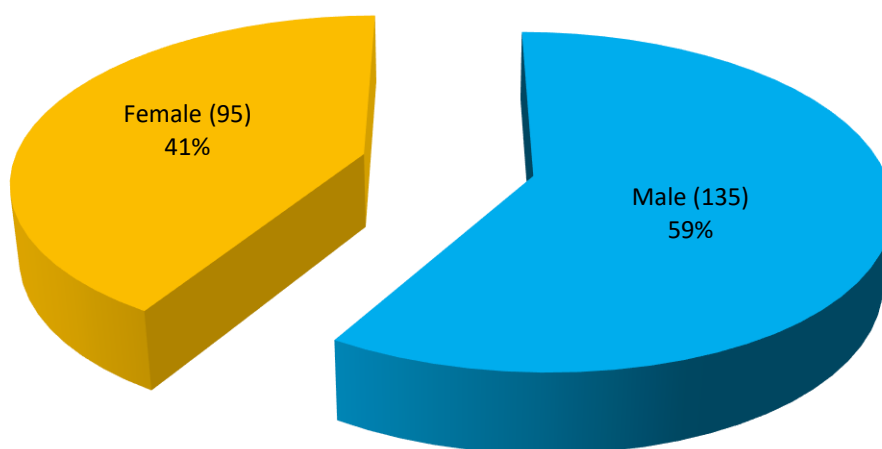Sex wise distribution of serological positive with percentage

Table – 3

Comparison of present study with previous workers

Year of study	Name of the worker	Place of study	Percentage of serological positive cases
2012	Gargs, Chakravat A and etal	New Delhi	63.3%
2011	Rodriguez Barraguer I, Soloman and etal	Chennai Tamil Nadu	93%
2011	Shah PS, peoshatwar etal	Pune (Maharashtra)	42.8 %
2010	Shilpi Hora yasmine Ibrahim Khan,	Mumbai (Maharashtra)	43.7 %
2008	Angel B Joshi V	Rajasthan	15.38 %
2011	Halasa YA, Dogra N, Arora N	Panjab	44.8 %
2020	Present study	Telangana + Ghanpur Medchal	41.8 %

The present study is more or less in agreement with previous studies.

Table – 3
Comparison of present study with previous workers
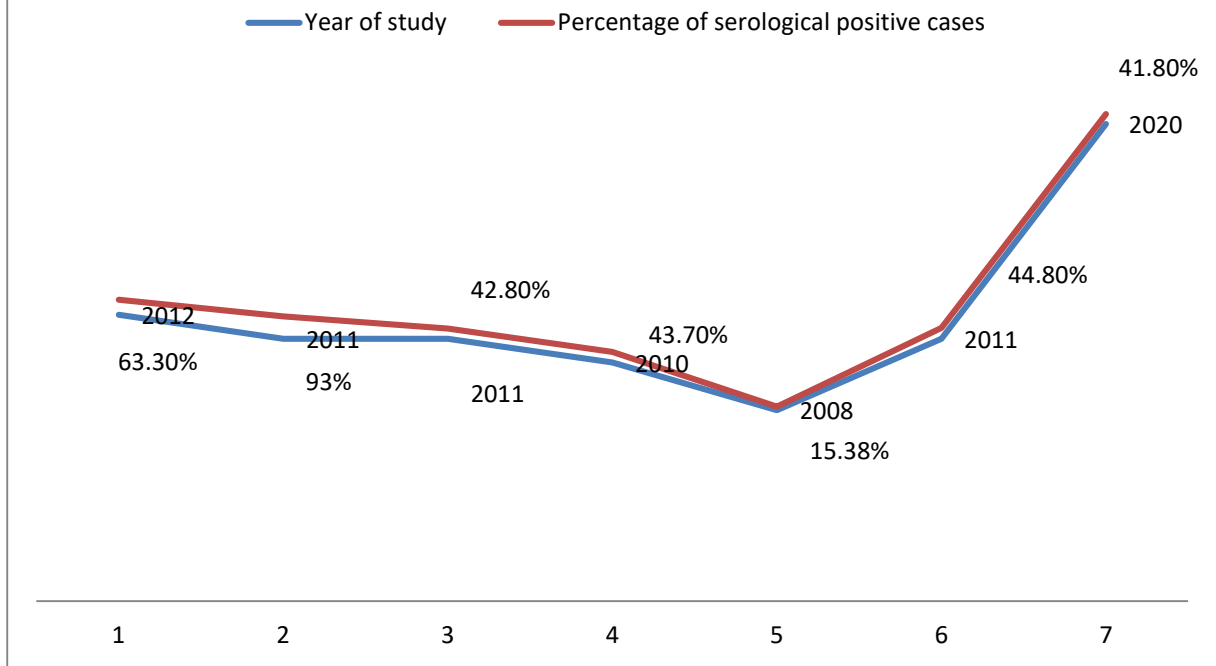
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