

Dengue Menace in the Plain Areas – A Study in Khammam District of the Telangana State

Dr Kolli Sri Karuna Murthy¹, Dr. Ayyadevara Rambabu²

¹(Associate Professor, GVP IHC & MT, Visakhapatnam, AP)

²(District Malaria Officer, Khammam)

*Corresponding author: Dr Kolli Sri Karuna Murthy

Introduction: Khammam District is known as a high risk, endemic and vulnerable district easily susceptible to vector – borne disease like malaria, dengue, chicken guniya and filariasis. Agency areas where tribals inhabit are prone to seasonal diseases every year with the onset of the monsoons. Against the background elaborated so far this research paper makes an attempt to analyse the incidence of dengue in the plain areas of the district along with the follow up action of the health providing agencies. **Materials and Methods:** Data has been collected for the period between 2010 and 2016 from the health department of the district and from the office of the district malaria officer. The district was divided in 2016 under the recognition process of the Telangana Government. As such the data analysed during 2016 pertains to the present areas of Khammam district. The problem mandal of dengue, Bonakal and the affected villages have been parts of Khammam district at present and also in the past. Health workers, Local elders and the RMPS (Recognised Medical Practitioners) have been interviewed to collect information on the related health issues. **Results:** the incidence of Malaria decreased from 4811 to 1163 between 2010 and 2012. It increased in 2013 and 2014 and again decreased considerably to 1020 in 2016. The sincere efforts, constant monitoring and creation of awareness among the tribals by the district authorities have produced tangible results. The decline in the prevalence of malaria over the years is 79 percent which is spectacular. **Conclusion:** Lack of community awareness on the need to prevent water storage, unethical practices of the R.M.P's and infection due to migrants from border districts are found to be the major causal factors, Health personnel of the Government would better counsel the villagers that fall in the platelet count due to fever need not be taken as a panic situation. Alternatives like cold water massage of the body and administering of water mixed with pinch of salt (and sugar) be given wide publicity so that platelets counts would increase. Awareness on the drying up of all the water containers to avoid mosquito breeding be created every year through special camps before the rainy season. Elimination of virus through mosquito-vector be given top priority to ensure prevention of the Dengue menace. Students, Mahila groups, village elders, teachers and Panchayath members are to be involved to promote rural health.

Keywords: Dengue, Incidence, Kammam District

Date of Submission: 30-08-2018

Date of acceptance: 14-09-2018

I. Introduction

Khammam district of the Telangana State lies between 16.45o and 18.35o of the Northern Latitude and 79.47o and 80.47o of the Eastern Latitude. It is strategically located with Chattisgarh and Odisha to the North, Godavari districts of Andhra Pradesh to the East, Krishna district of A.P. on the south and Nalgonda and Warangal districts of the Telangana State on the west. The earlier 10 districts of Telangana state were bifurcated into 31 districts for administrative efficiency due to which the district has 21 mandals now against 46 earlier. The river Godavari flows 180 kms in the district and the other rivers include Sabari, Kinnerasani and Munneru. Majority of the mandals are under tribal subplan and the district has maximum concentration of tribal population to an extent of 27.4 per cent. The tribal areas are converted by deep forests and a variety of flora and fauna. Rainfall in the district is always in excess of the state average. In view of its strategic location it bears the brunt of exodus of migrants from the border districts who seek wage employment. Large number of pilgrims from other state visit Bhadrachalam, the temple town of Lord Sri Rama and Sri Seetha.

Khammam District is known as a high risk, endemic and vulnerable district easily susceptible to vector – borne disease like malaria, dengue, chicken guniya and filariasis. Agency areas where tribals inhabit are prone to seasonal diseases every year with the onset of the monsoons. The critical months from health point of view are July to November. The district administration and health personnel have taken preventive, diagnostic and curative measures over the years to deal with the health hazards due to which the incidence of malaria has come down. However, Dengue which was negligible up to 2014 has become a challenge in 2016 by spreading over to the plain areas of the district. Bonakal, a mandal headquarter and the surrounding 10-12 villages within the

radius of 30kms witnessed alarming levels of Dengue incidence attracting the special attention of the state government. The state government sent expert teams to identify the incidence and to suggest preventive measures. The district administration and the health department have deployed more health personnel and equipment. The district collector has involved different stake holders interested in public health and monitored the situation regularly.

Against the background elaborated so far this research paper makes an attempt to analyse the incidence of dengue in the plain areas of the district along with the follow up action of the health providing agencies.

Objectives:

1. To examine the trends in the incidence of dengue, malaria and chicken guniya (vector-borne diseases) in the district.
2. To find out the casual factors for the outbreak of dengue so extensively in a mandal in the plain area within a radius of 30kms
3. Efforts of the district administration and state authorities to combat the severity of the dengue.
4. To suggest policy measures for its prevention in future.

II. Materials And Methods

Data has been collected for the period between 2010 and 2016 from the health department of the district and from the office of the district malaria officer. The district was divided in 2016 under the recognition process of the Telangana Government. As such the data analysed during 2016 pertains to the present areas of Khammam district. The problem mandal of dengue, Bonakal and the affected villages have been parts of Khammam district at present and also in the past. Health workers, Local elders and the RMPS (Recognised Medical Practitioners) have been interviewed to collect information on the related health issues.

Simple averages and percentages are used to analyze and interpret the collected data.

III. Results and Discussions

Malaria, a vector-borne disease is a regular feature in the agency areas of the district. However, the intervention in the form of preventive, diagnostic and curative by the health authorities of the district have yielded positive results in controlling and decreasing the incidence. Table-I here under shows the decreasing trend of Malaria.

Table-I : Incidence of Malaria in Khmmam district between 2010 and 2016.

Year	No of affected persons
2010	4811
2011	3171
2012	1163
2013	1697
2014	2990
2015	1822
2016	1020 (only 17 in the present Khammam district)
Source : Office of the DMO; Khammam	

It can be noted from the figures in the table that the incidence of Malaria decreased from 4811 to 1163 between 2010 and 2012. It increased in 2013 and 2014 and again decreased considerably to 1020 in 2016. The sincere efforts, constant monitoring and creation of awareness among the tribals by the district authorities have produced tangible results. The decline in the prevalence of malaria over the years is 79 percent which is spectacular. Chicken guniya affliction has been low and negligible in the district. Its incidence has been under control due to the efforts of the health authorities as revealed by the data in Table-II.

Table-II : Incidence of chicken gunia in Khammam district between 2012 and 2016.

Year	No of affected persons
2012	19
2013	07
2014	16
2015	54
2016	11
Source : Office of the DMO, Khammam	

It is clear from the data in the table-II that the affected persons have been less than 20 although the years of study except in 2015. When compared to 54 cases in 2015 a decrease to just 11 cases is noted in 2016 implying the success of the efforts.

The intriguing fact to the health administrators in the district is growing cases of dengue fever in the plain areas of the district. Aedes-Egypti is the mosquito which causes dengue and normally it bites during the day time. Data is presented in table-III to examine the trends in the incidence of dengue in the district.

Year	No of affected persons
2010	14
2011	52
2012	114
2013	57
2014	245
2015	439
2016	1333

Source : Office of the DMO, Khammam

Data reveals that the incidence of dengue increased to 114 in 2012 from 14 in 2010. The increase is 7 to 8 times. However, it decreased to 57 in 2013 and then started to increase abnormally. The increase between 2014 and 2016 is more than 5 times. Another interesting point is that the prevalence of the disease has spread mostly to the plain areas, Bonakal Mandal (a revenue unit) has been hit heavily as 10 to 12 villages with in 30kms have recorded maximum cases of dengue.

Profile of Bonakal mandal and the affected villages:

Total households of Bonakal mandal in 22 villages are 11055 with a population of 47,848 of which 24,823 have undergone screening/surveillance tests. About 530 dengue positive cases out of 1333 cases in the district have been noted only in this mandal. In other words 38.4 per cent of the dengue affected persons have been found in the 16 out of 22 villages of this mandal only. There was a “Sports Meet” in the mandal in August in which a large number of students participated. The incidence of dengue blew out of proportions from that point due to transmission from the few affected to many. The incidence has been severe from August 2016 to November 2016. Dengue affected persons are relatively high in the plain areas under the PHCs of Manchukonda (85), M.V.Palem (58), Urban Khammam (116) and the like. All these areas are very close to Khammam town and surprisingly the tribals in the agency areas are little affected. The state government has responded instantly and deputed 5 medical teams, each team consisting of 2 doctors, 2 pharmacists and one ANM to visit the affected villages. The district collector has monitored the situation on weekly basis and deployed additional staff and equipment. The Government of Telangana constituted a team of 4 experts; Dr. Madhavan, M.D., Physician, Fever Hospital, Hyderabad; Dr. Srikant Bhatt, Pediatrician, Fever Hospital; Sri. P. Sanjeeva Reddy, State Consultant (Etymology) and Sri Ganesh, Medical Analyst, Hyderabad to examine the ground situation in Bonakal mandal and to suggest measures to combat the dengue menace. The committee visited the affected villages in October 2016 and offered the following suggestions based on their observations.

- Surveillance for detection of dengue for early treatment is to be continued.
- Complicated and critical cases are to be referred to the higher centres for treatment.
- Additional staff is to be deployed in the affected PHCs.
- Aedes Larval incidence is to be monitored on weekly basis by the district Malaria officer and his staff.
- Source reduction activity to check the mosquito breeding is to be strengthened.
- Waste materials such as discarded tyres, tins, Plastic bottles and water containers need to be removed through special drives.
- Fogging and spraying of pyrethrum operations are to be continued in the affected villages
- Aedes Larva is to be demonstrated in the schools and in the meetings of the Mahila mandals.
- RMPs in the villages are to be addressed to create awareness about dengue diagnosis.

The district authorities have complied with most of the suggestions and by November 2016 the situation has been under control. Table IV reveals the follow up action by the district authorities in bonakal mandal to combat menace

TABLE IV

EHC BONAKAL – MANDAL BONAKAL – CHNC MADHIRA – KHAMMAM DISTRICT – TELANGANA STATE																					
STATEMENT SHOWING – DENGUE (ELISA) POSITIVES CASES & ACTION TAKEN FOR PREVENTIVE AS ON : 18.11.2016																					
S.NO	Name of the Village	Houses	Pop.	Date (From - To)	Elisa Positives (Total)	De-Watering (Larva)		Positive Containers	Total Revealed - Water in Containers	Pyrethrum Sprayed			Temophos Sprayed		Fogging	Para medical Teams	Health Awareness	Group Meeting in the Villages	Mike Announcement	Kala Jathara	Larva Containers (positive)
						Searched	Positive Containers			Houses	Rooms	Rounds	Houses	Rounds							
1	Allapadu	528	2112	20.08.16 to 17.11.16	69	528	18212	678	12	528	1784	4	528	6	4	4	Done	43	6	2	Nil
2	Govindapuram	585	2347	20.08.16 to 17.11.16	168	585	24435	694	12	585	1804	6	585	10	6	4	Done	35	8	2	Nil
3	Bonakal	1142	4570	20.08.16 to 17.11.16	105	1142	148771	1132	12	1142	3437	6	1142	8	8	8	Done	37	10	3	Nil
4	Rampuram	231	924	20.08.16 to 17.11.16	13	231	2742	97	10	231	732	4	231	4	4	4	Done	18	6	3	Nil
5	Ravinuthala	1016	4065	20.08.16 to 17.11.16	81	1016	90965	1245	12	1016	3644	8	1016	8	7	8	Done	42	15	4	Nil
6	Mustikuntla	1135	4240	20.08.16 to 17.11.16	15	1135	87673	1137	12	1135	3862	8	1135	8	6	8	Done	45	12	4	Nil
7	Garlapadu	175	523	20.08.16 to 17.11.16	10	175	3246	75	10	175	418	6	175	8	4	4	Done	18	8	2	Nil
8	Chirunomula	564	2287	20.08.16 to 17.11.16	16	564	20346	832	8	564	1692	6	564	7	6	4	Done	36	7	1	Nil
9	Choppakatlalalem	518	1910	20.08.16 to 17.11.16	8	518	22357	918	8	518	1837	7	518	7	6	4	Done	38	8	1	Nil
10	Kalakota	487	1555	20.08.16 to 17.11.16	9	487	23235	487	8	487	1548	7	487	8	6	4	Done	40	6	1	Nil
11	Shanti Nagar	1	30	20.08.16 to 17.11.16	1	1	237	1	4	1	67	3	1	3	2	2	Done	20	6	2	Nil
12	Brahmanapally	450	2865	20.08.16 to 17.11.16	2	450	19645	238	8	450	1328	6	450	6	5	3	Done	30	6	1	Nil
13	Lasmpuram	276	1060	28.08.16 to 17.11.16	1	276	16373	337	8	276	734	6	276	6	5	3	Done	26	6	1	Nil
14	Naraganapuram	432	1620	28.08.16 to 17.11.16	7	432	22740	287	8	432	1327	6	432	7	5	3	Done	24	6	1	Nil
15	Peddabeeravalli	375	2630	28.08.16 to 17.11.16	4	375	18764	224	8	375	1137	6	375	6	5	3	Done	38	6	1	Nil
16	Janakipuram	295	1154	20.08.16 to 17.11.16	1	295	15475	210	8	295	645	6	295	6	4	3	Done	37	6	1	Nil
TOTAL		8210	30000		510	8210	535216	8592	148	8210	30000	95	8210	108	83	69		527	122	30	

Major Findings:

1. Malaria has been decreasing in the district, even in the agency areas.
2. Chicken guniya is negligible and sporadic in the district.
3. Dengue has been in an increasing trend in the plain areas.
4. Transmission of the virus takes place in large gatherings and corporate hospitals where patients and attendants are more.
5. Apart from personnel health, community health awareness is lacking in the villages.
6. Fall in the platelet count alone is not a symptom of dengue. This point is to be impressed upon the RMPS.
7. Rural health scenario needs constant monitoring and health education
8. Personnel hygiene and environmental cleanliness are essential to control vector-borne diseases like dengue.

IV. Conclusion

Lack of community awareness on the need to prevent water storage, unethical practices of the R.M.P's and infection due to migrants from border districts are found to be the major causal factors, Health personnel of the Government would better counsel the villagers that fall in the platelet count due to fever need not be taken as a panic situation. Alternatives like cold water massage of the body and administering of water mixed with pinch of salt (and sugar) be given wide publicity so that platelets counts would increase. Awareness on the drying up of all the water containers to avoid mosquito breeding be created every year through special camps before the rainy season. Elimination of virus through mosquito-vector be given top priority to ensure prevention of the Dengue menace. Students, Mahila groups, village elders, teachers and Panchayath members are to be involved to promote rural health.

References

- [1]. Gubler (1997) Dengue and dengue hemorrhagic fever its history and resurgence as a global public health problem. 1-22. In: Gubler DJ, Kuno G. Dengue and Dengue Hemorrhagic Fever. CAB International, New York, New Yrk, USA.
- [2]. Gubler, (1988). Dengue, 223-260, In: Monath TP the Arboviruses: Epidemiology and Ecology. Volume II. CRC Press. Inc. Boca Roton, Florida.
- [3]. Holmes and Twiddy, (2003). The origin, emergence and evolutionary genetics of dengue virus. Infect Genet Evol. 3(1): 19-28.
- [4]. Young. P.R. (2000) J.Clin. Micbology. 38(3): 1053-1057.

- [5]. Guzman. M.G. (1996), Clin. Digno. L Immunol. 3(6): 621- 627.
- [6]. National Vector Borne Disease Control Program, <http://Invbdcp.gov.international.html>
- [7]. Chakravarti A, Kumaria R. (2005). Eco-epidemiological analysis of dengue infection during an outbreak of dengue fever, India. Vir. Jor. 32 (2): 1-7.
- [8]. Mahmood, K.Jameel. T., Aslam. H.F. and Tahir (2009), Incidence of dengue haemorrhatic fever in local population of Lahore, Pakistan, Biomed. (25): 93-96.

Dr Kolli Sri Karuna Murthy" Dengue Menace In The Plain Areas – A Study In Khammam District of The Telangana State."IOSR Journal of Dental and Medical Sciences (IOSR-JDMS), vol. 17, no. 9, 2018, pp 27-31.