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REVIEW ARTICLE

A Study of Malaria in Tripura State

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A part of Tripura still has a long way to go in terms of reducing the incidence of Malaria.

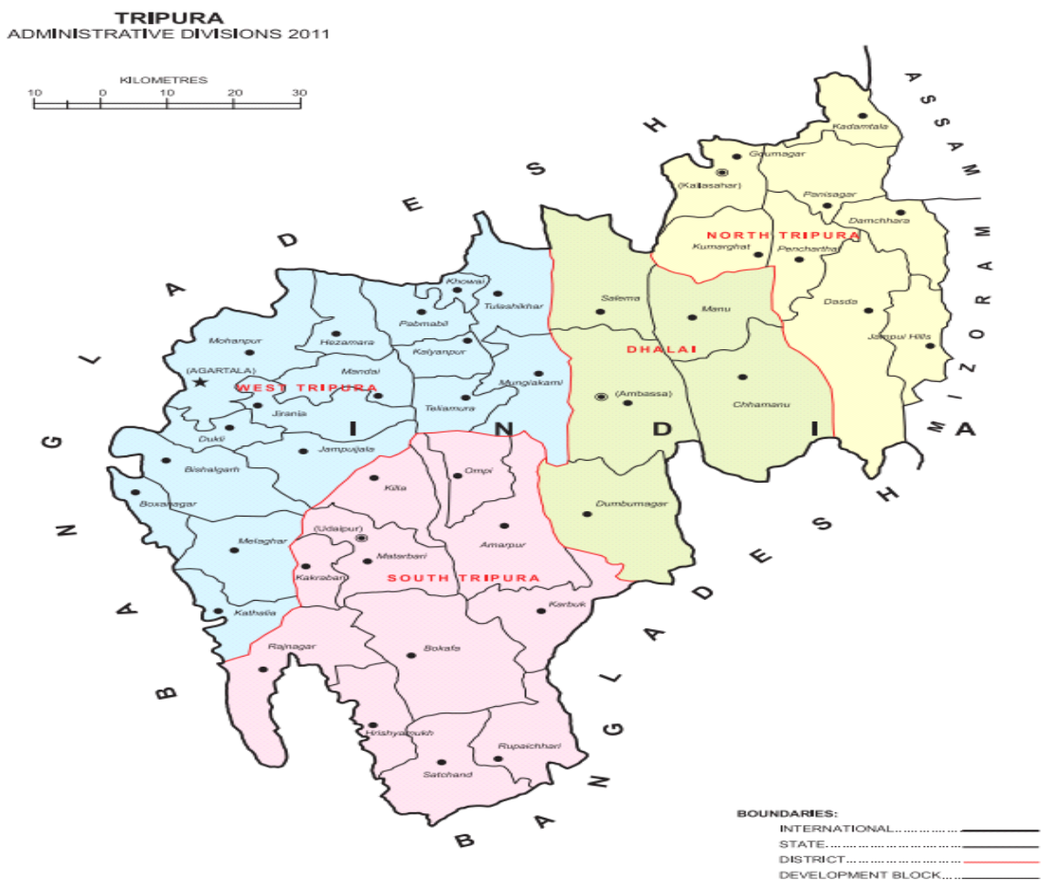

Fig.- 1: Map of Tripura [Source][1]

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Introduction

Tripura is in the north-eastern part of India. It is bordered by Bangladesh on the north, west and south. In the east, it is bordered by Assam and Mizoram.

Methods

According to the most recent data available on the National Vector-Borne Disease Control Programme website (data for the year 2018), the Annual Parasite Incidence (API) for Tripura is 3.23[2]. However, by going through the data for Tripura state, it is seen that the Malaria problem is not equally distributed in the districts; it is focal as can be seen from the following information[2].

Table- 1: API of the Districts of Tripura State, 2018

Rank	District	API
1	North Tripura	2.50
2	Unakuti	0.44
3	Dhalai	20.17
4	Khowai	1.70
5	West Tripura	0.13
6	Sepahijala	0.07
7	Gomati	2.02
8	South Tripura	2.28
State	**Tripura**	**3.23**

[Source] [2]

Results

So, it is seen that out of the eight districts, Malaria is highly concentrated in mainly Dhalai District. From the map given in Figure 1, this district shares its borders with Bangladesh. But three other districts also share their borders with Bangladesh.

It may be further useful to study what was the trend of the APIs in Dhalai District over the years. For this, the website of the National Vector-Borne Disease Control Programme was referred to and the following findings observed:

Table-2: Annual Parasite Incidence (API) of Dhalai District, 2017 and 2018

District	Year		
	2017	2018	2019
Dhalai	9.41	20.17	Data not available

[Source [2 and 3]]

It is observed that there is an increase over the years by more than double between 2017 and 2018. The percentage of cases in Dhalai which were due to P. falciparum was 96.27% in 2018 while it was 92.58% in 2017[2,3].

Whether this trend continued into 2019 is not known because the APIs for 2019 have not been published by NVBDCP yet. However, in Chhattisgarh, during 2020 and 2021, four rounds of "Malaria-Mukt Bastar" took place wherein every person living in each of the villages in the Bastar region had their finger pricked and a drop of blood drawn which was examined for the Plasmodium antigen using Rapid Diagnostic Kits. These campaigns detected the malarial antigen in both febrile persons and asymptomatic carriers and the most recent round was held from June 15, 2021, till July 31, 2021. If the diagnosis was P. vivax, Chloroquine and Primaquine were given to the patient. If it was P. falciparum, Artemisinin-based Combination Therapy (ACT) and Primaquine was provided. Mixed infections were treated by ACT and Primaquine[4,5]. As a result, though in the one year preceding till November 2019 there were 5272 cases of Malaria in the Bastar region, during the following year till November 2020 there were only 2696 cases i.e., there was a drop of about 49% in the number of cases[6]. That means there was some useful effect of these campaigns in that the reservoirs of the Malarial parasite i.e., the humans were effectively treated thereby reducing the number of those persons who could be sources of infection to the female Anopheline mosquitoes.

Conclusion

The more than double the increase in the value of API in Dhalai District between 2017 and 2018 could have occurred due to various factors. One could have been the increase in the quantum of reservoir by influx of infected persons from outside the state into Dhalai District. A second reason could be the development of resistance of the vectors to the existing insecticides and other control measures. A third reason could be the development of resistance of the Plasmodium parasite to the existing antimalarial drugs.

If an approach of universal diagnosis and radical treatment like that which was used in the "Malaria-Mukt Bastar" campaigns in Bastar is adopted in Dhalai District, it is possible that the API may come down further and more quickly in Tripura State, especially if it must reach the target of zero cases of Malaria by 2027. This would enable the country to receive the certification of Malaria elimination in 2030.

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