



Annual Parasite Incidence Study of Malaria in Madhya Pradesh

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Author's contribution

The sole author designed, analysed, interpreted and prepared the manuscript.

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ABSTRACT

The Sheopur District of Madhya Pradesh had a very high Annual Parasite Incidence (API) of Malaria during 2017 and 2018. However, if interventions like the treatment of asymptomatic carriers take place, it is expected that the API will come down soon.

Keywords: Malaria; Madhya Pradesh; API.

1. INTRODUCTION

Madhya Pradesh is in the central part of the country. Gujarat and Rajasthan lie to its west; to the north are Uttar Pradesh; in the east is Chhattisgarh, and in the south is Maharashtra. The northern part of the state includes the Sheopur district of which nearly 60 % is covered with forests [2]. In 2011, Madhya Pradesh had a population of 72,597,565 and had a literacy rate of 70.6% [3].

2. METHODS

The study design included analysis of the annual reports of the National Centre for Vector-Borne

Diseases Control (NCVBDC) pertaining to the years 2017 and 2018.

3. RESULTS

“According to the most recent data available on the NCVBDC website (data for the year 2018), the API for Madhya Pradesh is 0.27” [4]. However, it can be observed from the data for Madhya Pradesh that the malaria issue is not evenly dispersed among the districts; it is a focal point, as can be seen from the following Table 1.

Thus, it can be seen that, out of the 51 districts, Sheopur District has the highest concentration of malaria cases.

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Table 2. API of the Districts of Madhya Pradesh, 2018 (contd.)

S. No.	District	API
20	Harda	0.13
21	Rajgarh	0.18
22	Vidisha	0.16
23	Betul	0.22
24	Gwalior	0.18
25	Datia	0.60
26	Bhind	0.23
27	Morena	0.25
28	Shivpuri	0.33
29	Sheopur	4.42
30	Guna	0.27
31	Ashok Nagar	0.36
32	Rewa	0.31
33	Sidhi	0.85
34	Singroli	0.93
35	Shahdol	0.25
36	Anuppur	0.76
37	Umaria	0.41
38	Satna	0.40
39	Sagar	0.08
40	Chhatarpur	0.05
41	Tikamgarh	0.32
42	Damoh	0.15
43	Panna	0.21
44	Jabalpur	0.08
45	Katani	0.35
46	Chhindwara	0.52
47	Seoni	0.31
48	Balaghat	0.17
49	Mandla	0.27
50	Dindori	0.18
51	Narsingpur	0.30
STATE	MADHYA PRADESH	0.27

[Source: (4)]

It may be further useful to study what was the trend of the APIs in the Sheopur district over the years. For this, the website of the NCVBDC was referred to and the following findings were observed:

Table 3. API of Sheopur District, 2017 and 2018

District	Year		
	2017	2018	2019
Sheopur	6.34	4.42	Data not available

[Source: (4) and (5)]

4. DISCUSSION

It is observed that there is a decline over the years, but the problem is still large. The percentage of Malaria cases in Sheopur which

were due to *Plasmodium falciparum* was 19.32% in 2018 while it was 15.80% in 2017 showing that *Plasmodium vivax* was predominant there [4],[5].

However, in neighboring 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*, provision of Artemisinin-based Combination Therapy (ACT) and Primaquine was made. ACT and Primaquine

were used to treat mixed infections” [6][7]. “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” [8]. This indicates that these campaigns had some positive effects in that the human reservoirs for the malaria parasite were successfully treated, which decreased the number of people who may serve as sources of infection for female anopheline mosquitoes.

5. CONCLUSIONS

During 2016, the Indian Government formulated the Malaria Elimination in India framework which spanned 2016 – 2030 [9]. It was founded on the WHO Global Technical Strategy for Malaria, spanning the same period, which was formulated during 2015 and updated in 2021 [10]. The goal is to reach no Malaria cases in the country by the year 2027 and then after waiting for a period of three years, the WHO can then grant Malaria-free status certification to the country in 2030.

If an approach of universal diagnosis and radical treatment like that which was used in the “Malaria-Mukt Bastar” campaigns in Chhattisgarh is adopted in Sheopur District, it is possible that the API may come down further and more quickly in Madhya Pradesh, 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.

COMPETING INTERESTS

Author has declared that no competing interests exist.

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