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Epidemiological characteristics of malaria from 1951 to 2018 in Sanya city of Hainan Province, China

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Objective: To analyze the progress of eliminating malaria and the epidemiological characteristics of malaria in Sanya city, Hainan Province, China, from 1951 to 2018.

Methods: This study used the historical data analysis method which belongs to descriptive study to analyze the epidemiological characteristics of malaria. The data were obtained from previous historical records of the Center for Disease Control and Prevention in Sanya. Microsoft Excel 2010 and IBM SPSS 21.0 software were used for data collation and analysis.

Results: The malaria prevention and control in Sanya experienced three main stages. Time during 1951-1983 is the period of controlling malaria epidemic, 1984-2009 is the period of regular management, and 2010-2018 is the period of eliminating malaria. From 1951 to 2018, the incidence of malaria showed a long-term trend of gradual decline. The average annual incidence rates were 268.55 per 10 000 people during 1951-1983, 22.96 per 10 000 people during 1984-2009, and 0.026 per 10 000 people during 2010-2018, respectively. The highest incidence of malaria in history was in 1956 and the incidence was 1 030.60 per 10 000 people. From 1951 to 2018, the incidence of malaria was high in all months throughout the year, with the highest incidence in July. The distribution characteristics of the insect species were as follows: before 1981, the reported cases were mainly *Plasmodium falciparum* malaria; from 1981 to 2014, the reported cases were *Plasmodium falciparum* malaria and *Plasmodium vivax* malaria; and the local cases were quartan malaria in 2015. As for the characteristics of the vectors: before 1960, *Anopheles minimus* was the main vector of malaria transmission, and after 1980, *Anopheles dirus* was the main vector.

Conclusions: From 1951 to 2018, the incidence of malaria in Sanya decreased gradually and showed a trend of elimination.

Keywords: Malaria; Incidence rate; Epidemiological distribution characteristics; Retrospective analysis

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