

# FALCIPARUM MALARIA RESISTANT TO FANSIDAR (SULPHADOXINE-PYRIMETHAMINE) OCCURRING IN THREE CHILDREN OF THE SAME FAMILY

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## SYNOPSIS

Three cases of multiple drug resistant falciparum malaria in the same family are described. It is interesting to note that falciparum malaria resistant to Fansidar has not as yet been reported in adults from West Malaysia up to the present time, although resistance to the drug in children is being encountered not infrequently. This presents a serious paediatric problem because malaria causes the highest incidence of mortality and morbidity in this age group in a proportion of the rural population.

## INTRODUCTION

Drug resistant falciparum malaria occurs in South East Asia and poses considerable problems to physicians treating such cases. The degree of resistance varies from country to country with RII and RIII occurring more frequently in Thailand. In Malaysia the experience of the author is that over 95% of cases of chloroquine resistant falciparum malaria is of the RI (delayed) type, which is the mildest form of resistance as evaluated by the World Health Organisation (1). Strains of *P. falciparum* resistant to chloroquine are widespread throughout Malaysia. The idea of demarcating areas of chloroquine resistance as advised by epidemiologists is not applicable when dealing with clinical cases of falciparum malaria because, in our experience, a number of persons of indigenous populations have lived for generations in one locality and suffer from falciparum malaria resistant to chloroquine without ever having left the area.

Strains of *P. falciparum* resistant to more than one drug have been reported by Fung, (2) and Paul, (3) from Singapore. Doberstyn et al (4) reported that 15% of their Thai patients suffering from falciparum malaria were resistant to a single dose therapy with Fansidar. Studies by Ryan (5) in Vietnam have revealed that 4 out of 21 cases of falciparum malaria were resistant to Fansidar.

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Fig. 1: Map of West Malaysia showing Kampong Kuala Mu.

**CASE HISTORIES**

Three children, aged 9 months, 3 years and 4 years respectively, of an Aborigine family from Kampong Kuala Mu in Perak (Fig. 1) were admitted to the Gombak Hospital, Selangor, with falciparum malaria. The village has a medical post where the medical orderly extends simple treatment and first aid to villagers coming for such attention. Being in an area endemic for malaria, supplies of chloroquine were readily available for suppression and treatment. The parents reported that the children used to receive suppressive therapy with chloroquine whenever the fever lasted for more than 3 - 4 days. This led to a rapid relief of the symptoms only for a temporary period after which recurrences occurred. The time intervals between such recurrences varied according to the intensity of transmission and tended to be seasonal in relation to rainfall.

The whole family was admitted in July 1980 and the

affected children were given the standard three day course of chloroquine. Two of them were resistant at the RII level, and one at the RI (delayed) level, respectively. Subsequently, they were treated with a single dose of Fansidar, the dosages being in proportion to their ages. All of them were resistant to the drug, two at the RII level and one at the RI (early recrudescence) level. They failed to respond to a second dose of Fansidar given a week after the first dose. Subsequently, cures were effected with quinine and pyrimethamine. All antimalarials were administered by the author; detailed records of clinical observations and laboratory examinations were also maintained.

**DISCUSSION**

So far there have been no reports in Malaysia of *P. falciparum* infections in adults which have been resistant to treatment with Fansidar. However, it is interesting to note that these children whose case reports are briefly described above have been found to be resistant to two consecutive doses of Fansidar given at intervals of a week. The reasons why these children are resistant to the drug combination are not known. Other cases of children showing similar patterns of drug resistance are being followed up. Intensive research in the fields of molecular biology, clinical chemistry, and pharmacology may in due course throw some light on this intriguing problem.

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