

ABSTRACT

POLYMORPHISM GENE PLASMODIUM FALCIPARUM DHFR AND DHPS AMONG PREGNANT WOMEN WITH FALCIPARUM MALARIA IN DISTRICT BANJAR, SOUTH KALIMANTAN PROVINCE

Pregnant women are highly vulnerable to malaria infection in malaria endemic areas, particularly infected with *P. falciparum* that can cause premature, low birth weight (LBW), severe anemia in pregnant women, and death. Sulfadoxine-pyrimethamine (SP) for *Intermittent Preventive Treatment for pregnant* (IPTp) is used for malaria control in pregnancy by World Health Organization's recommendation that has already been implemented in Africa. The *P. falciparum* resistance to SP has occurred in several malarial endemic areas, and the mutation gene of PfDHFR and PfDHPS is associated with parasite resistance to SP treatment. Mutation gene of PfDHFR and PfDHPS in pregnant women infected with *P. falciparum* has not yet been examined in Indonesia.

The cross-sectional study was conducted, and 127 pregnant women were recruited randomly from 2008 to April 2010 at two subdistricts, Sungai Pinang and Peramasan, in Banjar district, South Kalimantan Province. Mutation gene of PfDHPS and PfDHFR analyzed by *nested* PCR-RFLP method resulted six of seven samples of pregnant women infected with *P. falciparum* have triple mutations consisting of *double* PfDHFR (N108 and I51) and *single-* mutation gene PfDHPS (G437). One sample had quadruple mutations consisting of *double* PfDHFR (S108N and N51I) and *double* PfDHPS (G437 and E540). These results suggested that *P. falciparum* resistance to SP may occur at Sungai Pinang and Peramasan subdistricts. Thus, these study results could be used as a recommendation for malaria control policy in pregnant women at malaria endemic areas in Indonesia, particularly the implementation of IPTp in Banjar District, South Kalimantan Province

Keywords : *P. falciparum*, Pregnant women, gen PfDHFR, gen PfDHPS