

**ABSTRACT****EFFICACY STUDY OF DYHIDROARTEMISININ-PIPERAQUINE AND MUTATION PfATPase6 GENE IN 769 CODON FROM UNCOMPLICATED FALCIPARUM MALARIA IN JAYAPURA DISTRICT***Background :*

Recently has been reported that artemisinin-resistant *Plasmodium falciparum* malaria has emerged. It is assumed that continuous artemisinin pressure will affect polymorphism the protein target, PfATPase6 gene (SERCA). Although coding region mutation to confer of artemisinin resistance still continuing discuss due to the geographical difference in the diversity and distribution of serca SNPs. ACT has been used for malaria treatment in Jayapura District since last 2006s. In vivo study of the ACT efficacy in association with molecular marker of artemisinin resistance has not yet been known well, particularly in Indonesia. The aim of this study is to know the efficacy of DHP after 5 years in use and the mutation of PfATPase6 gene in the 769 codon, a candidate codon to artemisinin-resistant

*Method*

The time-series study was conducted from January to Februari 2012 in Harapan Health Center and Nimbokrang Health Center in Jayapura District. 52 patients with uncomplicated falciparum malaria were recruited by informed consents and treated with Dyhydroartemisinin-Piperaquine (DHP). The treatment efficacy was observed on day 1,2,3,7 and 14 by thick smear microscopys and axillary temperature. A nested PCR was applied for diagnosis confirmation on day 0,7 and 14. The mutation of PfATPase6 gene in codon 769 was analysed by PCR-RFLP

*Results*

This study showed parasite clearance in Harapan Health center on day 7 was 92,6% and Nimbokrang Health center on day 7 and 14 were 88% and 92%. No mutation in PfATPase6 gene in 769 codon was detected in *P. falciparum* isolates.

*Conclusion*

No mutation in 769 codon of PfATPase6 gene and the Late Parasitological Failure was found in Jayapura District. It suggested that DHP seems to be loss its ability to kill *P. falciparum*, and the 769 codon of PFATPase6 gene could not be suitable as a marker for artemisinin resistant. Thus, it needs further study to elaborate the PfATPase6 gene in correlation with late parasitological failure by DNA sequencing.

**Keywords :** *Uncomplicated falciparum malaria, DHP Efficacy, PfATPase6 gene*