Volume 01 Number 01 Juli 2012

Abstract Book

Report

– LPT UNAIR –

The 2nd International Conference of Life Sciences Brawijaya University 2012

"Prospective and Contribution Of Life Sciences for Better Life"

LSIH UB

BiosainsUB

5th Anniversary of Central Laboratory of Life Sciences (LSIH)
and Grand Opening of Biosains Laboratory
University of Brawijaya Malang, July 14th - 16th, 2012

P-BB03

The Efficacy of Dihydroartemisinin Piperaquine and The Mutation of 768 codon of PfATPase gene In uncomplicated Falciparum malaria in Jayapura District, Papua Province, Indonesia

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ABSTRACT

Recently has been reported that artemisinin-resistant Plasmodium falciparum malaria has emerged. It has been proposed that continuous artemisinin pressure will affect polymorphism in 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 determine the efficacy of Dihydroartemisinin-Piperaquine (DHP) after 5 years in use and analyze polymorphism of *PfATPase6* gene in the 769 codon, a candidate codon to artemisinin-resistant. The time-series study was conducted from January to February 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 Dyhidroartemisinin-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. 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 polymorphism in *PfATPase6* gene in 769 codon was detected in *P. falciparum* isolates, and no mutation in 769 codon of *PfATPase6* gene were detected from the parasites of Late Parasitological Failure found in Jayapura District. It suggested that DHP seems to become less effective and require a little more time to kill *P. falciparum*, and that the 769 codon of PFATPase6 gene might not be suitable as a marker for artemisinin resistent. We need further study to elaborate the *PfATPase6* and other candidate genes in correlation with late parasitological failure by DNA sequencing.

Key words: DHP efficacy, falciparum malaria, PfATPase6 gene, Uncomplicated

The 2nd International Conference of Life Sciences 2012 (ICLS 2012)
Malang, July 14th – 16th 2012