DISERTASI

HUBUNGAN POLIMORFISME GEN PfK13 DENGAN RESPON TERAPI *Artemisinin Combination Therapy* PADA PENDERITA MALARIA FALCIPARUM DI KABUPATEN PESAWARAN PROVINSI LAMPUNG

Oleh

BETTA KURNIAWAN

BP 1130202136

Pembimbing :

1. **Prof. Dr. Nuzulia Irawati, MS**
2. **Dr. Djong Hon Tjong, MSi**
3. **Dr. dr. Jhon F Suwandi, M. Kes**

PROGRAM PASCA SARJANA
PROGRAM STUDI S3 BIOMEDIK
FAKULTAS KEDOKTERAN
UNIVERSITAS ANDALAS
PADANG
2017

ABSTRAK

HUBUNGAN POLIMORFISME GEN PfK13 DENGAN RESPON TERAPI *Artemisinin Combination Therapy* PADA PENDERITA MALARIA FALCIPARUM DI KABUPATEN PESAWARAN PROVINSI LAMPUNG

Betta Kurniawan

Resistensi obat anti malaria merupakan salah satu faktor yang berhubungan dengan tingginya angka kejadian malaria. Resistensi anti malariaberkaitan dengan adanya polimorfisme gen penyandi proteinyang berhubungan dengan mekanisme kerja obat anti malaria. Studi tentang resistensi dengan mengidentifikasi mutasi gen telah banyak dilakukan salah satunya yang paling akhir diteliti adalah gen *Plasmodium falciparum K13* (PfK13). Tujuan penelitian ini yaitu mengkaji hubungan polimorfisme gen PfK13 dengan respon terapi ACT padapenderita malaria falciparum di Kabupaten Pesawaran Provinsi Lampung

Penelitian ini bersifat observasional analitik *cross sectional* yang dilakukan di Puskesmas Hanura Kabupaten Pesawaran pada tahun2015 hingga 2016. Jumlah sampel yang diperoleh adalah48 orang. Sampel dilakukan pengamatan gejala klinis dan pemeriksaan mikroskopis secara serial selama 28 hari berdasarkan protokol WHO tahun 2006. Penentuan polimorfisme dilakukan dengan analisis biomolekuler dengan isolasi DNA, amplifiksasi gen dan sekuensing.

Hasil penelitian didapatkan respon terapi pada 47responden (97,9%) masih adekuat dan 1 responden (2,1%) mengalamirespon terapi gagal.Dari hasil sekuensing diketahui bahwa tidak terdapat polimorfisme pada gen PfK13 pada isolat Pesawaran Lampung. Hubungan antara polimorfisme gen PfK13 dengan respon terapi ACT pada penderita malaria falciparum tidak dapat dilakukan secara statistik.

Kesimpulan pada penelitian ini yaitu bahwa gambaran respon terapi ACT pada penderita malaria falciparum di Kabupaten Pesawaran masih adekuat. Tidak diketemukan polimorfisme gen PfK13 pada isolat Plasmodium dari penderita malaria falciparum di Kabupaten Pesawaran

Kata Kunci : Malaria, Polimorfisme, PfK13, ACT, respon terapi, resistensi

ABSTRACT

ASSOCIATION OF PFK13 GENE POLYMORPHISM WITH THE THERAPY RESPONSE OF *Artemisinin Combination Therapy* ON FALCIPARUM MALARIA PATIENTS IN PESAWARAN REGENCY OF LAMPUNG PROVINCE

Betta Kurniawan

Anti-malarial drug resistance is one of the factors that related to high rates of malaria incidence. Anti-malarial resistance is associated with the presence of polymorphisms of protein-coding genes that related to the mechanism of action of anti-malarial drugs. The study of resistance by identifying gene mutations has been widely performed. One of the most recently studied is the Plasmodium falciparum K13 (PfK13) gene. The purpose of this study is to examine association of PfK13 gene polymorphism with therapy response of ACT on falciparum malaria patients in Pesawaran Regency of Lampung Province.

This cross section observational study was conducted at the Hanura Community Health Center of Pesawaran Regency from 2015 to 2016. The number of samples obtained was 48 people. Samples were observed to their clinical symptoms and examined serialized microscopically for 28 days based on WHO protocol in 2006. Polymorphism determination was performed by biomolecular analysis with DNA isolation, gene amplification, and sequencing.

The result of the research showed that therapy response on 47 respondents (97,9%) was adequate and 1 respondent (2,1%) had failed therapy response. From the results of sequencing, it was known that there was no polymorphism in PfK13 gene on isolates of Pesawaran, Lampung. Association of PfK13 gene polymorphism with the therapy response of ACT on falciparum malaria patients could not be done statistically.

The conclusion of this study is the representation of therapy response of ACT on falciparum malaria patients in Pesawaran Regency was still adequate. There was not found PfK13 gene polymorphism in Plasmodium isolates on falciparum malaria patients in Pesawaran Regency.

Keywords: Malaria, Polymorphism, PfK13, ACT, therapy response, resistance


UNIVERSITAS ANDALAS
UNTUK
KEDJAJAAN
BANGSA