Aplikasi real time pcr dalam deteksi infeksi submikroskopis plasmodium falciparum dan plasmodium vivax di nangapanda ende = A real time pcr assay in detection sub microscopic infection of plasmodium falciparum and plasmodium vivax in nangapanda sub district ende

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Abstrak

Parasitemia rendah umumnya tidak dapat terdeteksi pada saat pemeriksaan secara mikroskopis. Penelitian dilakukan untuk mendeteksi infeksi submikroskopis Plasmodium falciparum dan Plasmodium vivax di Nangapanda, Ende menggunakan metode Real-time Polymerase Chain Reaction (PCR). Sebanyak 72 sampel darah anak (umur 5--18 tahun) digunakan dalam amplifikasi DNA menggunakan gen target 18S rRNA. Hasil yang diperoleh menunjukkan Realtime PCR mampu mendeteksi adanya infeksi submikroskopis P. falciparum dan P. vivax di Nangapanda. Persentase infeksi submikroskopis yang diperoleh dari sampel positif P. falciparum sebesar 11,1%, P. vivax sebesar 9,7% dan infeksi campuran sebesar 2,8%. Sensitivitas Real-time PCR mampu mendeteksi kategori nilai Ct low load of DNA (Ct>35) dengan persentase infeksi sebesar 9,7% untuk P. falciparum dan 8,3% untuk P. vivax. Hasil uji chi-square menunjukkan tidak adanya hubungan yang signifikan (p>0,05) antara infeksi submikroskopis dengan variabel jenis kelamin dan kelompok umur. Deteksi terhadap infeksi submikroskopis berguna terutama dalam program eliminasi malaria.

.....In malaria endemic areas, individuals are frequently asymptomatic are present at densities below the limit for conventional microscopy. An 18S rRNA based multiplex Real-time Polymerase Chain Reaction (PCR) had been done to determine sub-microscopic infection of Plasmodium falciparum and Plasmodium vivax. A total of 72 blood samples from children 5--18 years of age in Nangapanda sub-district, Ende were analysed. The sensitivity of Real-time PCR revealed that sub-microscopic infections are common in this area. The prevalence for P. falciparum, P. vivax and mixed infection of both species are 11,1%, 9,7% and 2,8%, respectively. A low load of Plasmodium species-specific DNA (Ct>35) was found for P. falciparum and P. vivax in 9,7% and 8,3% of the positive cases, respectively. There was no significant correlation (p>0,05) between malaria submicroscopic with gender and age groups. Real-time PCR provides more insight into the epidemiology of P. falciparum and P. vivax infections, which could be applied for monitoring and evaluation of novel programs for the elimination of malaria.</i>