

# Hubungan antara Infeksi Soil Transmitted Helminth dengan Kadar Sitokin IL-4, IL-10, TNF- $\alpha$ , dan IFN- $\gamma$ ; = The Relationship between Soil Transmitted Helminth Infection and IL-4, IL-10, TNF- $\alpha$ , and IFN- $\gamma$ ; Counts in Nangapanda Population, Ende, East Nusa Tenggara

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## Abstrak

### **ABSTRAK**

Latar Belakang: Infeksi STH merupakan salah satu infeksi yang paling sering terjadi di dunia terutama di negara-negara berkembang seperti Indonesia. Infeksi STH dapat menimbulkan morbiditas bahkan mortalitas tergantung dari intensitas infeksi dan respon imun hospes. Respon imun hospes terhadap infeksi STH antara lain berupa produksi berbagai kadar sitokin termasuk IL-4, IL-10, TNF- $\alpha$ , dan IFN- $\gamma$ . Tujuan : Penelitian ini bertujuan untuk menganalisa hubungan antara berbagai status infeksi STH dengan kadar IL-4, IL-10, TNF- $\alpha$ , dan IFN- $\gamma$ . Metode : Penelitian ini dilakukan dengan teknik potong lintang menggunakan data penduduk Kecamatan Nangapanda dari penelitian sebelumnya pada tahun 2009. Hasil : Dari total 118 subjek penelitian, prevalensi infeksi STH di Kecamatan Nangapanda didapatkan sebesar 45,80 . Prevalensi pada subjek berusia < 60 tahun sebesar 39,13 dan pada subjek > 60 tahun sebesar 69,23 . Nilai tengah kadar sitokin IL-4, IL-10, TNF- $\alpha$ , dan IFN- $\gamma$  pada subjek penelitian secara berturut-turut didapatkan sebesar 20,80 pg/ml, 21,74 pg/ml, 3,20 pg/ml, dan 1,60 pg/ml. Terdapat hubungan bermakna antara usia dengan status infeksi dengan prevalensi lebih tinggi pada kelompok usia > 60 tahun dan tidak ditemukan hubungan bermakna antara infeksi STH dengan kadar sitokin IL-4, IL-10, TNF- $\alpha$ , dan IFN- $\gamma$ , kecuali antara status infeksi kombinasi *Ascaris* dan cacing tambang pada penduduk Kecamatan Nangapanda. Kesimpulan : Tidak terdapat hubungan bermakna antara status infeksi STH dengan keempat kadar sitokin, namun terdapat hubungan bermakna antara status infeksi STH kombinasi *A. lumbricoides* dan cacing tambang terhadap kadar sitokin IL-4.

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### **ABSTRACT**

Introduction Soil Transmitted Helminth STH infection is one of the most common infection in the world especially in developing country like Indonesia. STH infection causes various morbidity and even lead to mortality depending on infection intensity and host immune response. Host immune response evokes various cytokine production including IL 4, IL 10, TNF  $\alpha$ , and IFN  $\gamma$ . Objective This study aims to obtain the prevalence of STH infection in a population living in Nangapanda district, to describe IL 4, IL 10, TNF  $\alpha$ , and IFN  $\gamma$  cytokine counts of the population, as well as to investigate the relationship between STH infection and cytokine counts of IL 4, IL 10, TNF  $\alpha$ , and IFN  $\gamma$ . Method .This study used cross sectional method based on the data from a previous study that was conducted in Nangapanda district back in 2009. Result From a total of 118 subjects, the prevalence of STH infection found in Nangapanda district was 45,80 . The prevalence of subject 60 years old was 39,13 and 60 years old was 69,23 . The median of IL 4, IL 10, TNF  $\alpha$ , and IFN  $\gamma$  counts of the subject population, respectively was 20,80 pg ml, 21,74 pg ml, 3,20 pg ml, and 1,60 pg ml. There was significant relationship between age and STH infection status with higher prevalence in subject

60 years old but there was no significant relationship between STH infection status and cytokine counts of IL 4, IL 10, TNF , and IFN except between Ascaris and hookworm infection and IL 4 count. Conclusion There is no significant difference between STH infection status and cytokine count except between Ascaris and hookworm coinfection with IL 4 count.