

## ABSTRAK

### **HUBUNGAN ANTARA TITER ANTI-HBs DENGAN ANGKA CD4 DAN CD8 PADA ANAK YANG TELAH MENDAPATKAN IMUNISASI HEPATITIS B LENGKAP**

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#### **INTISARI**

**Latar belakang.** Beban penyakit hepatitis B masih tinggi secara global, dimana 15 hingga 40 persen dari individu yang terinfeksi virus hepatitis B akan menderita sirosis, gagal hati, dan karsinoma hepatoseluler. Imunisasi bertujuan membentuk antibodi anti-HBs dengan titer protektif untuk mencegah infeksi. Sel limfosit T CD4 dan CD8 memiliki peran dalam proses pembentukan imunitas paska imunisasi.

**Tujuan.** Mengetahui hubungan antara titer anti-HBs dengan angka CD4 dan CD8 pada anak yang telah mendapatkan imunisasi hepatitis B lengkap.

**Metode.** Desain penelitian adalah potong lintang dengan subjek 52 anak berusia 8 bulan hingga 5 tahun di Posyandu Bungas, Daerah Istimewa Yogyakarta. Titer anti-HBs diperiksa dengan metode ELISA dan angka sel CD4 dan CD8 diperiksa dengan metode *immunocytochemistry*.

**Hasil.** Didapatkan 52 subjek penelitian dengan median titer anti-HBs 72,965 IU/L (kisaran interkuartil 360,98), rerata angka CD4  $49,73\% \pm 29,75$  dan angka CD8  $60,43 \pm 25,50$ . Titer antibodi yang protektif ditemukan pada 73% subjek penelitian. Setelah dilakukan uji korelasi, tidak didapatkan hubungan antara titer anti-HBs dengan angka CD4 ( $r=-0,104$ ,  $p=0,464$ ) dan angka CD8 ( $r=0,199$ ,  $p=0,157$ ).

**Kesimpulan.** Tidak terdapat hubungan antara titer anti-HBs dengan angka CD4 dan CD8 pada anak yang telah mendapatkan imunisasi hepatitis B lengkap.

Kata kunci: titer anti-HBs, CD4, CD8, imunisasi, hepatitis B

## CORRELATION BETWEEN ANTI-HBs TITER WITH CD4 AND CD8 COUNT IN CHILDREN WHO HAVE COMPLETED HEPATITIS B IMMUNIZATION

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### ABSTRACT

**BACKGROUND.** Hepatitis B remains a global burden, with estimated 15 to 40 percents of infected individuals eventually suffer from liver cirrhosis, liver failure, and hepatocellular carcinoma. Immunization aims to form anti-HBs antibody with protective titer to prevent infection. CD4 and CD8 T cell lymphocytes are known to play major role in establishing immunity after immunization.

**OBJECTIVE.** This study aims to find correlation between anti-HBs titer with CD4 and CD8 count in children who have obtained complete hepatitis B immunization.

**METHODS.** This is a cross-sectional study with 52 subjects between 8 months to 5 years of age in Bungas Community Health Service, Special Region of Yogyakarta, Indonesia. Anti-HBs titer was examined using enzyme immunoassay and CD4 and CD8 counts were examined using immunocytochemistry method.

**RESULT.** Of 52 subjects, median anti-HBs titer was 72.965 IU/L (interquartile range 360.98), mean CD4 and CD8 counts were  $49.73\% \pm 29.75$  and  $60.43 \pm 25.50$ , respectively. Protective level of antibody was found in 73.1% of subjects. Correlation test was conducted and no correlation was found between anti-HBs titer with neither CD4 count ( $r=-0.104$ ,  $p=0.464$ ) nor CD8 count ( $r=0.199$ ,  $p=0.157$ ). Age was found to have weak negative correlation with anti-HBs titer ( $r=-0.367$ ,  $p=0.007$ ).

**CONCLUSION.** We found no correlation between anti-HBs titer with neither CD4 count nor CD8 count in children who have obtained complete hepatitis B immunization.

Keyword: anti-HBs titer, CD4, CD8, hepatitis B, immunization