

# Analisis ekspresi Gen Interleukin-1B dan Interleukin-6 pada cairan sulkus gingiva anak usia 6-8 tahun dengan kejadian stunting = Analysis of Interleukin-1B and Interleukin-6 Gene Expressions in gingival crevicular fluid in children aged 6-8 years with incidence of stunting

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## Abstrak

Latar Belakang: Tingginya angka prevalensi stunting merupakan salah satu masalah kesehatan terkait tumbuh kembang anak di Indonesia. Selain menggambarkan kondisi malnutrisi yang terjadi, stunting juga dapat dikaitkan dengan respon imun innate terhadap status kadar konsentrasi Hb dan indeks OHI-S. Untuk menganalisis perbedaan respon imun innate terkait status HAZ normal dan stunting serta kaitannya terhadap status kadar konsentrasi Hb dan indeks OHI-S, beberapa penelitian menggunakan kadar ekspresi relatif IL-1 dan IL-6 pada cairan sulkus gingiva. Tujuan: Menganalisis hubungan antara kadar ekspresi relative IL-1 dan IL-6 pada cairan sulkus gingiva dengan status HAZ normal dan stunting serta status kadar konsentrasi Hb dan indeks OHI-S. Metode: Sampel diambil dari sediaan biologis tersimpan penelitian tahun 2019 dari anak usia 6-8 tahun lalu dikelompokkan berdasarkan status HAZ normal dan stunting. Sampel RNA dari cairan sulkus gingiva dilakukan sintesis cDNA kemudian kadar ekspresi relatif IL-1 dan IL-6 diuji menggunakan RT-qPCR. Hasil yang diperoleh kemudian diolah menggunakan SPSS. Hasil: Dalam penelitian ini, ditemukan tidak ada hubungan bermakna antara kadar ekspresi relative IL-1 dan IL-6 atau status kadar konsentrasi Hb dan indeks OHI-S dengan status HAZ stunting anak ( $p>0.05$ ). Korelasi antara variabel adalah sebagai berikut: korelasi positif sangat lemah antara indeks OHI-S pada kelompok sampel dengan status HAZ severely stunting, stunting, dan normal ( $r = 0,089$ ). Kesimpulan: Pada penelitian ini kadar ekspresi relatif IL-1 dan IL-6 pada cairan sulkus gingiva tidak dapat digunakan sebagai indikator biologis untuk menentukan status HAZ anak usia 6-8 tahun. Sedangkan, status kadar konsentrasi Hb dan indeks OHI-S tidak dapat digunakan untuk menentukan status HAZ anak usia 6-8 tahun.

.....Background: The high prevalence of stunting is one of the health problems related to child development in Indonesia. In addition to describing the condition of malnutrition that occurs, stunting can also be associated with the innate immune response to the status of Hb concentration levels and OHI-S index. To analyze the differences in innate immune responses related to normal and stunting HAZ status as well as correlations with status of Hb concentration levels and OHI-S index, several studies used the relative expression levels of IL-1 and IL-6 in gingival crevicular fluid. Objective: To analyze the relationship between the relative expression levels of IL-1 and IL-6 in gingival crevicular fluid with normal and stunting HAZ status as well as the status of Hb concentration levels and OHI-S index. Method: Samples were taken from biological stored research in 2019 from children aged 6-8 years and then grouped based on normal and stunting HAZ status. RNA samples from gingival crevicular fluid were synthesized by cDNA and then the relative expression levels of IL-1 and IL-6 were tested using RT-qPCR. Data were statistically analysed using SPSS. Result: In this study, it was found that there was no significant relationship between the relative expression levels of IL-1 and IL-6 or status of Hb concentration levels and OHI-S index with stunting HAZ status of children ( $p>0.05$ ). The correlations between variables are as follows: very weak positive correlation between the OHI-S index in the sample group with severe stunting, stunting, and normal HAZ status ( $r =$

0.089). Conclusion: In this study, the relative expression levels of IL-1 and IL-6 in the gingival crevicular fluid cannot be used as a biological indicator to determine the HAZ status of children aged 6-8 years. Meanwhile, the status of Hb concentration levels and OHI-S index cannot be used to determine the HAZ status of children aged 6-8 years.