

## Korelasi antara kadar hemoglobin dan status nutrisi anak = Correlation between hemoglobin level and infant nutritional status indicator

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### Abstrak

**Pengantar:** Anemia pada anak adalah masalah nutrisi yang sering dihadapi di Indonesia. Stunting adalah salah satu perlambatan tumbuh-kembang anak yang berhubungan dengan gangguan pertumbuhan kognitif, penurunan tinggi badan, penurunan tingkat produktivitas dan kesulitan bersekolah. Penelitian sebelumnya menunjukkan bahwa kadar hemoglobin berkaitan erat dengan GH-IGF-1 yang sangat penting dalam proses pertumbuhan anak. Studi ini bertujuan untuk mengetahui korelasi antara gagal tumbuh dan kadar hemoglobin pada anak berumur 6 sampai 8 bulan.

**Bahan dan Metode:** Sebuah studi cross sectional dilakukan pada 55 anak berusia antara 6 sampai 8 bulan di Kampung Melayu, Jakarta Timur, Indonesia. Pemeriksaan antropometrik berupa pengukuran tinggi badan dan berat badan dilakukan menggunakan WHO-Anthro 2005 untuk mendeteksi gagal tumbuh. Kadar hemoglobin diukur menggunakan metode HemoCue. Analisa statistik menggunakan spearman correlation test.

**Hasil:** Korelasi antara tinggi/umur Z-score sebagai indikator dari tumbuh dapat dilihat di penelitian ini ( $r:0.394$ ,  $P<0.05$ ). Selain itu, kita juga melihat korelasi antara berat/umur Z-score dengan kadar hemoglobin ( $r: 0.332$ ,  $P<0.05$ ). Tidak ada korelasi yang dapat kita lihat antara tinggi badan/berat badan Z-score dengan kadar hemoglobin ( $r:0.113$ ,  $P>0.05$ ).

**Kesimpulan:** Hasil dari penelitian ini menunjukkan bahwa kadar hemoglobin berkorelasi dengan tinggi badan/umur sebagai indikator pertumbuhan kronik yang ada pada anak. Hal ini dimungkinkan dengan kerja IGF-I yang menghambat apoptosis dari sel hematopoetik. Perhatian yang lebih tinggi pada nutrisi anak sangatlah penting. Skrining terhadap tingkat kadar hemoglobin dan juga menyusui harus dilakukan untuk mencegah anemia.

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**Introduction:** Anemia in infant is a common nutritional problem in Indonesia. Stunting as a form of growth and development retardation that is associated with delayed cognitive development, decreased adult stature, decreased productivity and fewer years of schooling is important to be prevented in early age. Previous study found out that hemoglobin level has association with GH-IGF-I level which is important in growth process. This study aims to find out correlation between stunting and hemoglobin level among infants aged 6 to 8 months old.

**Materials and Methods:** A cross-sectional study was done on a total of 55 infants aged between six to eight months old at several clinics in Kampung Melayu, East Jakarta-Indonesia. Anthropometric measurements of weight and height were done and analyzed using WHO-Anthro 2005 to detect stunting. Hemoglobin level was measured using hemoCue method. Statistical analysis was done using spearman correlation test.

**Results:** Correlation between height/age Z-score as an indicator of growth with hemoglobin level was observed in this study ( $r: 0.394$ ,  $P<0.05$ ). In addition, we also observed the correlation between weight/age Z-score with hemoglobin level ( $r: 0.332$ ,  $P<0.05$ ). No correlation was observed between weight/height Z-

score with hemoglobin level. (r: 0.113,  $P>0.05$ ).

Conclusion: The result of this study shows that hemoglobin level correlates with height/age Z-score which is a chronic growth indicator of infants. This is possible due to action of IGF-I which inhibits apoptosis of hematopoietic cells. Therefore, greater concern regarding nutrition, especially in infants is imperative. Steps such as hemoglobin level screening and breastfeeding must be done in order to prevent anemia which correlates with stunting.