

Hubungan status vitamin D dengan penyakit leukemia limfoblastik akut pada anak = Association between vitamin D status and pediatric acute lymphoblastic leukemia

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Abstrak

Latar belakang: Leukemia limfoblastik akut (LLA) merupakan kanker tersering pada anak. Berbagai studi mendapatkan bahwa vitamin D berperan dalam pencegahan beberapa jenis kanker. Belum ada studi yang menilai hubungan status vitamin D dengan penyakit LLA pada anak di Indonesia.

Tujuan: Untuk mengetahui hubungan antara status vitamin D dengan penyakit LLA pada anak.

Metode: Studi potong lintang pada 40 anak LLA yang baru terdiagnosis dan 40 anak sehat yang sesuai umur dan jenis kelamin. Pasien LLA diambil secara consecutive sampling di RSUPN Dr. Cipto Mangunkusumo Jakarta dan RSUP Dr. M. Djamil Padang. Status vitamin D diklasifikasikan berdasarkan rekomendasi Institute of Medicine yaitu defisiensi bila kadar < 12 ng/mL, insufisiensi $12 - < 20$ ng/mL, dan normal $20 - 100$ ng/mL. Data dianalisa menggunakan uji Chi-Square dan independent sample t-test, dengan kemaknaan $p < 0,05$.

Hasil: Terdapat 22 (55%) anak laki-laki pada masing-masing kelompok dan kelompok usia 1-4 tahun merupakan kelompok terbanyak (48%). Mayoritas anak LLA memiliki status vitamin D normal (78%), demikian juga kelompok kontrol (63%). Terdapat 3(7%) dan 6(15%) anak LLA serta 1(2%) dan 14(35%) anak sehat memiliki status defisiensi dan insufisiensi berturut-turut dengan $p = 0,14$. Rerata kadar vitamin D anak LLA adalah $25,1(7,6)$ ng/mL dan anak sehat $21,9(5,67)$ ng/mL, dengan perbedaan rerata $3,14$ (IK95% $0,15 - 6,13$) dan $p = 0,04$.

Simpulan: Mayoritas anak LLA yang baru terdiagnosis memiliki status vitamin D normal. Rerata kadar vitamin D anak LLA lebih tinggi bermakna dari anak sehat, namun tidak terdapat hubungan yang bermakna antara status vitamin D dan penyakit LLA pada anak.

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Background: Acute lymphoblastic leukemia (ALL) is the most common cancer in children. Various studies have found that vitamin D plays a role in the prevention of several types of cancer. Currently, there is no study in Indonesia that assess association between vitamin D status and pediatric ALL

Objective: To determine association between vitamin D status and pediatric ALL.

Methods: A cross-sectional study of 40 newly diagnosed ALL children and 40 age- and sex-matched healthy children. ALL patients were taken by consecutive sampling at Dr. Cipto Mangunkusumo Hospital Jakarta and Dr. M. Djamil Hospital Padang. Vitamin D status is classified based on Institute of Medicine recommendations; deficiency < 12 ng/mL, insufficiency $12 - < 20$ ng/mL, and normal $20 - 100$ ng/mL. Data were analyzed using Chi-square test and independent sample t-test. A p-value < 0.05 is considered to be statistically significant.

Results: There were 22 (55%) boys in each group and the group 1-4 years was the most age group (48%). Majority of ALL children had normal vitamin D status (78%) and also in healthy children (63%). There were 3(7%) and 6(15%) ALL children as well as 1(2%) and 14(35%) healthy children had deficiency and insufficiency status consecutively, with p value $= 0.14$. The mean vitamin D level of ALL children and

healthy children were 25.1 (7.6) ng/mL and was 21.9 (5.67) ng/mL consecutively, with mean difference of 3.14 (95% CI 0.15-6.13) and p value =0.04..

Conclusion: The majority of newly diagnosed ALL children have normal vitamin D status. The mean vitamin D levels of ALL children was significantly higher than healthy children, however there was no significant association between vitamin D status and ALL in children.