

INTISARI

Pakpahan, N, 2021. Pengaruh Anemia Defisiensi Besi Terhadap Sistem Kekebalan Tubuh Pada Anak. Skripsi. Program Studi D4 Analisis Kesehatan, Fakultas Ilmu Kesehatan Universitas Setia Budi Surakarta.

Anemia defisiensi besi memberikan dampak sistemik tidak hanya pada sistem hematologi, tetapi juga pada sistem imun. Kekurangan zat besi dapat mempengaruhi kapasitas dalam merespon imun yang memadai. Sekitar 40% populasi dunia menderita anemia defisiensi besi dan 25% diantaranya dalam usia sekolah. Tujuan penelitian ini adalah untuk mengetahui pengaruh anemia defisiensi besi terhadap sistem kekebalan anak.

Penelitian ini merupakan sebuah *literature review*. Pencarian database yang digunakan termasuk “*Google Scholar*” dan “*PubMed*”, dengan keyword “Anemia Defisiensi Besi”, “Sistem Imun”, “Imunitas Anak”, “Limfosit CD4 dan CD8”. didapatkan 13.618 artikel dan digunakan 11 artikel yang sesuai melalui analisis tujuan, kesesuaian topik, metode penelitian yang digunakan, hasil dari setiap artikel.

Anemia defisiensi besi memiliki pengaruh terhadap system kekebalan anak dengan penurunan respon sitokin pro-inflamasi terhadap stimulasi TLR1-2 dan 4, dimana persentase CD4 dan rasio CD4: CD8 secara signifikan lebih rendah meskipun kadar CD8 dapat bervariasi turun atau normal; terdapat penurunan IgG, Ig A, Ig M, Ig D yang bervariasi dan penurunan IL-6 yang signifikan; Aktivitas fagositik netrofil dan ledakan oksidatif neutrofil yang lebih rendah, dengan kecenderungan monositosis, limfopenia dan neutropenia. Sehingga dapat disimpulkan anemia defisiensi besi dapat mempengaruhi sistem kekebalan tubuh pada anak.

Kata kunci : anemia defisiensi besi, sistem imun, imunitas anak, limfosit CD4 dan CD8.

ABSTRACT

Pakpahan, N, 2021. The Effect of Iron Deficiency Anemia on the Immune System in Children. Thesis, Bachelor' degree Program in Medical Laboratory Technologi, Health Sciences Faculty. Setia Budi University.

Iron deficiency anemia has a systemic impact not only on the hematological system but also on the immune system. Iron deficiency can affect the capacity to respond adequately to the immune system. About 40% of the world's population suffers from iron deficiency anemia and 25% of them are school-aged. This study aims to determine the effect of iron deficiency anemia on children's immune system.

This research is a literature review. Database searches used included "Google Scholar" and "PubMed", with the keywords "Iron Deficiency Anemia", "Immune System", "Children's Immunity", "CD4 and CD8 Lymphocytes". 13.618 articles were obtained and 11 articles were used that were appropriate through the analysis of the objectives, suitability of the topic, research methods used, the results of each article.

Iron deficiency anemia has an effect on the immune system of children by decreasing the response of proinflammatory cytokines to TLR1-2 and 4 stimulation, where the CD4 percentage and CD4:CD8 ratio are significantly lower although, CD8 levels; there was a variable decrease in IgG, Ig A, Ig M, Ig D, a significant decrease in IL-6; Lower neutrophil phagocytic activity and neutrophil oxidative burst, with tendency to monocytosis, lymphopenia, and neutropenia. So, it can be concluded that iron deficiency anemia can affect the immune system in children.

Keywords: iron deficiency anemia, immune system, child immunity, CD4 and CD8 lymphocytes.