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Iodine deficiency as a risk factor of malignant blood diseases in children

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BACKGROUND AND AIM

The role of iodine as an anticarcinogenic agent is just beginning to be widely appreciated.

METHODS

The aim of our study is to identify a link between iodine deficiency and the development of hematological malignancies in children. We screened iodine status in 36 children with oncohematological diseases and 32 healthy. Children were tested for iodine in the urine, ultrasound of thyroid glands were done.

RESULTS

The group of patients aged 1.5 to 17 years. Acute lymphoblastic leukemia was diagnosed in 29 children, acute myeloblastic leukemia - 5, juvenile myelomonocytic leukemia - 1, Hodgkin's lymphoma - 1. The concentration of iodine in urine was reduced in 30 patients (83.3%), and normal in 16.7%. The group of healthy children aged 2 to 18 years. In 16 children (48.5%) normal levels of iodine in the urine were found, in 15 (45.5%) reduced, in 1 (3%) significantly reduced and in 2 (6%) elevated. The concentration of iodine in the urine of children with oncohematological diseases was significantly lower than in healthy ($p = 0.008$). The most common pathology (69.2%) detected during sonographic examination of thyroid gland in the group of children with blood malignancies were colloidal inclusions. Increased thyroid volume was found in 53.8% of patients and changed thyroid echostructure with the appearance of hypoechoic zones and the formation of nodules confirmed in 46.2%.

CONCLUSIONS

Iodine deficiency among children with oncohematological pathology is more common than in healthy children. An early marker of iodine deficiency is the appearance of colloidal inclusions in the tissue of thyroid gland.