The maximum yield of the target product was 70 mol.% in terms of the introduced nucleoside after 3.5–4 hs of the reaction under the indicated conditions. The activity of the dry PLD preparation was 617 nmol/min/mg. To our knowledge, the 5'-phosphatidyl derivative of 6-thio-2'-deoxyguanosine was obtained for the first time.

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THE INFLUENCE OF DIFFERENT TYPES OF CAROTENOIDS ON THE RISK OF NON-HODGKIN'S LYMPHOMA

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The article deals with the study of the influence of carotenoids on the risk of non-Hodgkin lymphoma through meta-analysis of studies and experiments in this area.

Keywords: non-Hodgkin lymphoma, carotenoids, carotene, lutein, carcinogenesis, meta-analysis.

Non-Hodgkin's lymphoma (NHL), a heterogeneous group of malignant neoplasms, is the most common hematological malignant tumor [1]. NHL development is influenced by risk factors such as cigarette Smoking, alcohol use, obesity, and family history of NHL disease[1, 3]. Dietary factors also play a role in the development of the NHL. A recent meta-analysis has shown that consumption of fruits and vegetables significantly reduces the risk of NHL [3]. This is biologically possible due to the antioxidant and anti-carcinogenic properties of vegetables and fruits.

Carotenoids are fat-soluble pigments present in red, yellow, orange and dark green fruits and vegetables [2].

It is assumed that carotenoids protect against carcinogenesis by suppressing the ability of reactive oxygen species to cause DNA damage – an important step in carcinogenesis and neoplastic transformation [2]. In addition, provitamin a carotenoids can be metabolized to retinol, which is important for controlling cell differentiation and proliferation and immunological functions [3].

Several epidemiological studies have reported a relationship between carotenoid consumption and the risk of NHL [1], but the results are inconsistent. Part of the experiments showed a significant protective role of carotenoids against NHL, but the remaining studies did not reveal a relationship [3]. Therefore, a systematic review and meta-analysis of observational studies was conducted to consider the relationship between consumption of certain carotenoids and NHL risk in General.

The meta-analysis included 4,946 cases in which increased intake of alpha-carotene, beta-carotene, and lutein / zeaxanthin was found to be associated with a reduced risk of NHL. Meta-analysis showed that some specific carotenoids (alpha-carotene, beta-carotene and lutein / zeaxanthin) exhibit a protective role against NHL, while others (lycopene and Delta-cryptoxanthin) do not. Apparently, the protective role of a specific carotenoid depends on malignant tumors. For example, alpha-carotene, beta-carotene, and lutein / zeaxanthin protect against breast cancer, beta-cryptoxanthine protects against lung cancer, alpha – carotene and lycopene protects against prostate cancer, and alpha-and beta – carotene protects against stomach cancer [1, 2]. Although the underlying mechanisms of divergence of effects on NHL risk among specific carotenoids are unclear, some studies have been conducted by American and Chinese scientists in support of the protective role of individual specific carotenoids [3]. For example, in a cohort study with 301 NHL patients, higher alpha-carotene intake was associated with better overall survival among ever-smokers [2]. An in vivo study showed that mice with lymphoma fed beta-carotene supplementation had increased survival, reduced lipid peroxidation, and increased glutathione status [1].

Several restrictive factors should be considered in interpreting the findings. First of all, all studies were conducted in Western countries, which limited the ability to study the potential impact of carotenoid consumption on the risk of NHL in other ethnic groups, such as Asian populations, whose diets tend to differ from the Western population [3]. Secondly, all participants in the studies were women [3]. Some studies did not take into account smoking, alcohol and body mass index, which are considered important factors in this area of study [1, 3]. Final-

ly, in assessing the NHL risk associated with taking a particular carotenoid, none of the included studies took into account the effects of other carotenoids.

Thus, higher intake of alpha-carotene, beta-carotene, and lutein / zeaxanthin, but not lycopene or Delta-cryptoxanthine, is associated with reduced risks of NHL. Further cohort studies are needed to confirm this link.

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GENDER AND AGE SPECIFIC FEATURES OF THE CIRCULATORY SYSTEM DISEASES OF THE POPULATION IN MINSK REGION

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Cardiovascular disease (CVD) is the leading cause of mortality and disability in Belarus. Among the causes of mortality, diseases of the circulatory system occupy a leading place, in the structure of general morbidity - the second place. The continuing increase in the incidence rate, the defeat of people of an increasingly young age, make cardiovascular diseases a major medical and social health problem.

Keywords: myocardial infarction, angina pectoris, cardiovascular diseases, morbidity.

The work is devoted to the analysis of the morbidity of the population of the Minsk region, including different age groups, diseases of the circulatory system in the period from 2012 to 2018. Based on the reported data of the Minsk Regional Clinical Hospital on the number of cases of registered diseases in the class "Diseases of the circulatory system" and the population of the Minsk region, the relative intensive and extensive coefficients were calculated, the error was calculated and the reliability of the relative values was calculated, the method of analyzing the long-term dynamics of the population morbidity indicators was used .

According to the results of the study, it was found that the incidence of diseases of the cardiovascular system in the Minsk region population had a steady increase by 15 % until 2016, from 2016 to 2018. incidence decreased by 10 %. The overall increase in incidence was 3,4 %.

In the structure of the morbidity of the population of the Minsk region with cardiovascular pathologies, the main place is occupied by arterial hypertension, myocardial infarction, atherosclerosis, acute heart failure.

Among patients with AH, both in men and women, persons aged 18-35 years old, 35-48-65 years old (working age) predominate. A decrease in the incidence of hypertension was detected at the age of> 65 years by 5,82 %. These changes are statistically significant.

Three age groups prevail among AS patients: 48-68 years old and 35-48,> 65 years old. They account for 32,62, 26,74 and 21,54 %, respectively, of all cases of diseases of this nosology.

The incidence of myocardial infarction has increased in all age groups, except for persons> 65 years old. The incidence in the age groups of working age by this pathology has a less pronounced increase.

Acute heart failure has the smallest increase over the study period (8,36 %). Persons over 65 are most susceptible to this disease. The increase was 24,41 %.

An analysis of the incidence of male and female populations has shown that in men of younger and middle age, cardiovascular diseases are recorded by 9,48 % more often than in women. In older age groups, men and women suffer from this pathology equally.

Statistically significant differences in indicators at the end of the observation period relative to the initial year of the study with a probability of> 0,999 were determined for:

– for arterial hypertension – t = 3,79;

– for atherosclerosis – t = 3,46;

– for acute heart failure – t = 3,9;