ANTIOXIDANT USE IN COMPLEX TREATMENT OF ONCOLOGICAL SICK

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With the development of malignant tumors, toxic substances accumulate in the body. products, which ultimately leads to a decrease in the body's resistance, worsens the results of treatment and contributes to the development of postoperative complications. Development and clinical use of drugs with antioxidant properties or reduce the level of toxic products in the body, is necessary to improve the effectiveness of the treatment of cancer patients.

Activation of the process of lipid peroxidation (LPO) impairs permeability cell membrane, causing cell death. Interaction of active forms oxygen with cellular compounds, mainly with membrane lipids, disrupts structure and functional state of cells of organs and tissues, reduces their resistance. One of the reasons for the intensification of lipid peroxidation during the development of malignant process may be a deficiency of antioxidants and, in particular, ÿ-carotene, as the most a powerful bioantioxidant that regulates lipid peroxidation [1].

Since the main biochemical criteria for intoxication of the body are the content of malondialdehyde (MDA) and glutathione, then, using these indicators in oncological patients who received antioxidant vitamins in complex therapy, we intended to determine the role of vitamins and ÿ-carotene in the detoxification of the body, which can have a significant impact on treatment outcomes.

The relationship between a high risk of cancer and low security is shown the human body with vitamins C, A and ÿ-carotene [2]. The mechanism of carcinoprotective activity of vitamins is multiple in nature and can manifest itself in various levels depending on the chemical nature of the vitamin and the nature of the carcinogenic impact.

Although ÿ-carotene in the human body is partially converted into vitamin A and serves retinoic acid precursor (which regulate cell differentiation and

have carcinoprotective properties), it is ÿ-carotene as such against the background of normal provision of cells with vitamin A obviously plays the role of the main carcinoprotector. The results of a number of epidemiological studies show that that a low incidence of cancer correlates mainly with a high level of consumption and high blood levels of ÿ-carotene rather than vitamin A [3].

High doses of ÿ-carotene activate lymphocytes and increase their sensitivity to radiation factors and anticancer drugs. It is hypothesized that patients with malignant neoplasms should be prescribed ÿ-carotene for stimulation of immunity and fixing the therapeutic effect [4].

The purpose of this study is to study the role of ÿ-carotene in the complex treatment patients with liver cancer and myocardial infarction.

To do this, it was necessary to conduct a comparative study of the content of vitamins A, E and ÿ-carotene in the blood serum of practically healthy individuals (control group), patients with myocardial infarction and patients with primary and metastatic liver cancer, and also indicators of endogenous intoxication by the content of glutathione and MDA in the blood the above patients and the control group before and after the introduction of a complex of vitamins, which included

ÿ-carotene.

The object of the study were samples of blood serum and erythrocytes almost healthy individuals with myocardial infarction and liver cancer.

26 people were examined. Of these: 5 - practically healthy persons, 10 - patients with liver cancer and 11 patients with myocardial infarction. Patients in progress complex treatment for 7 days received a complex of antioxidant drugs the following composition: ÿ-tocopherol - 400 mg / day, ÿ-carotene - 30 mg / day, ascorbic acid - 1.5 g / day. Plasma and erythrocyte samples were examined before and after antioxidant therapy.

To determine the concentration of vitamins A and E [5], we used the method fluorimetry. The work was carried out on a fluorimeter PERKIN ELMER LS 50; vitamin E - ÿ fluorescence - 325 nm, excitation ÿ - 290 nm; vitamin A - fluorescence ÿ - 465 nm, excitation ÿ - 320 nm. The content of ÿ-carotene [6], glutathione and MDA determined by spectrophotometric method. The work was carried out on a spectrophotometer BECKMAN DU 650, ÿ-carotene at ÿ - 450 nm, glutathione at ÿ - 305 nm, MDA at ÿ - 532 nm.

The content of vitamins (A, E and ÿ-carotene), glutathione and MDA was determined in the blood practically healthy individuals until they receive a complex of vitamins E, C and ÿ-carotene.

In a group of healthy individuals, the average content of vitamin A in the blood was 3.45 µmol/l; E - 20.1 µmol/l ÿ-carotene - 1.50 µmol/l; glutathione - 1.4mg / 100ml erythr.; MDA - 4.7 µmol / l.

When examining the blood of practically healthy individuals, it turned out that the level of vitamins A and E are at the lower limit of normal. ÿ-carotene content, MDA levels and glutathione (GSH) are normal.

After taking a complex of vitamins for 7 days, the MDA indicators in the group healthy individuals remained virtually unchanged. At the same time, there was an increase in blood vitamin content: A - by 15%, E - by 16%, ÿ-carotene - by 116% (Table 1).

In patients with myocardial infarction, it has been shown that the content of vitamins A, E and ÿ-carotene in blood serum was practically within the normal range. lower the content of vitamins in patients compared with a group of healthy individuals, probably due to a number of reasons, one of which may be insufficient consumption of them with food. At the same time, a high level of MDA in the blood serum of patients was noted. myocardial infarction, which indicates insufficient regulation of LPO processes and is the basis for the use in the scheme of complex treatment of these patients vitamins - antioxidants. It was found that after taking the complex vitamins, the intoxication of the body sharply decreased (MDA by 43 ***%),*** while glutathione in erythrocytes increased by 55%. The concentration of vitamins A and E is also rose. The content of ÿ-carotene increased by 39% (Table 2).

A study was made of the content of vitamins (A, E and ÿ-carotene), glutathione and MDA in the blood of patients with primary and metastatic liver cancer before enteral introduction of a complex of vitamins E, C and ÿ-carotene.

During therapy with an antioxidant complex in patients with primary and metastatic liver cancer, the concentration of vitamins A and E in the blood increased slightly. Perhaps, to normalize the level of vitamin E, the dose of the drug should be increased. The concentration of ÿ-carotene increased by 39%. There was a sharp an increase in glugathione by 43% at its low concentration before taking vitamins, and also a gradual decrease in the content of toxic substances in the blood (on average, MDA by 7%) (Table 3).

Thus, in practically healthy individuals, a deficiency of vitamins A, E and

ÿ-carotene. The content of MDA and the level of glugathione were within the normal range. At in patients with liver cancer, a decrease in the blood content of vitamins A, E and carotene against the background of an increase in the concentration of ADA in the blood serum and a decrease in erythrocyte levels of glugathione. In patients with myocardial infarction, the concentration vitamins A, E and carotene in the blood was practically within the normal range. At the same time, there was an increase in the content of ADA, a decrease in the level of glugathione, which indicates intoxication of the body. **Administration to patients with liver cancer antioxidant complex (vitamins C, E and carotene) for 7 days contributes to the normalization of the content of ADA in the blood serum and glugathione in erythrocytes. Similar data were obtained in the treatment of patients myocardial infarction. The results obtained make it possible to recommend inclusion of antioxidants in the scheme of complex treatment of patients with liver cancer and myocardial infarction.**

Table 1. The content of vitamins, glugathione and indicators of intoxication in blood of practically healthy people before and after taking an antioxidant vitamin complex

p/n	FULL NAME.	Vitamin content, ***µmol/l***						MDA, ***µmol/l***		GSH, ***mmol/l***	
		BUT		E		ÿ-carotene					
one.	B-va	2.27	4.9	18.4	29.8	1.47	3.57	4.8	4.2	1.13	1.76
2.	M-ich	2.23	7.9	17.7	27.4	1.60	3.20	4.0	4.0	2.03	1.17
3.	B-s	2.38	4.1	17.4	24.4	1.35	2.98	4.3	4.2	0.60	0.88
4.	A-ko	5.60	5.3	25.8	19.1	1.36	3.32	4.4	4.6	1.61	1.99
five.	X-di	4.79	4.7	21.0	15.4	1.74	3.14	5.9	5.8	1.64	1.27

Table 2. The content of vitamins, glugathione and indicators of intoxication in the blood patients with myocardial infarction before and after taking the antioxidant complex

vitamins

p/n	FULL NAME.	Vitamin content, ***µmol/ l***						MDA, ***µmol/ l***		GSH, ***mmol/ l***	
		BUT		E		ÿ-carotene					
one.	B-va	2.3	2.9	18.5	23.8			14.8	5.23	1.3	1.76
2.	B-s	2.4	3.1	17.4	24.4			14.30	9.23	0.6	0.88
3.	Ch-yuk	2.3	2.49	17.1	17.41	0.73	1.57	9.9	6.6	1.5	1.7
4.	M-va	2.8	2.95	18.9	19.68	0.99	1.32	6.7	6.5	1.4	2.0
5.	X-va	2.8	2.78	18.9	19.88	1.14	1.52	8.5	5.8	1.0	1.8
6.	E-s	2.3	3.9	16.8	24.02	1.2	1.27	11.5	7.59	0.3	1.1
7.	G-erg	2.2	2.5	17.01	20.08	1.2	1.5	11.2	8.27	0.3	1.26
8.	A-in	2.1	2.8	18.8	20.2	1.08	1.36	15.3	6.71	1.0	0.8
nine.	S-va	2.4	2.65	16.8	24.2	1.27	1.95	13.8	6.31	0.7	0.9

Table 3. The content of vitamins, glugathione and indicators of intoxication in the blood of patients with primary metastatic liver cancer

before and after taking the antioxidant vitamin complex

p/n	FULL NAME.	Vitamin content, µmol/l						MDA, ***µmol/ l***		GSH, ***mmol/ l***	
		BUT		E		carotene					
one.	Wow	2.53	2.95	17.27	22.78	0.23	2.10	11.6	9.4	0.5	1.26
2.	B-va	2.55	2.62	19.42	20.22	1.18	2.01	10.6	7.15	0.6	0.8
3.	S-s	2.34	2.53	17.81	21.45	1.82	2.14	9.3	7.8	0.6	0.9
4.	G-tein	2.62	3.17	20.92	21.41	2.81	3.38	14.6	9.5	0.8	1.3
five.	3-va	2.37	2.56	19.94	21.43	1.48	2.69	11.2	9.8	1.1	1.33
6.	GE-s	2.36	2.50	16.87	20.08	1.16	2.17	11.7	8.1	0.7	0.9
7.	Mr.	2.47	2.55	17.98	18.93	1.51	1.53	8.8	8.0	0.8	2.7
8.	In-in	2.39	2.52	18.00	20.60	2.17	2.20	9.8	7.7	0.8	1.0
nine.	M-yan	2.55	2.68	19.14	21.06	2.40	2.81	8.5	5.5	1.2	1.2
10.	B-an	2.55	2.95	20.20	22.65	1.23	1.32	8.0	6.6	0.2	0.7

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