

CHRONOPTIMIZATSIYA THERAPY OF ONCOLOGIC DISEASES

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The main purpose of chronooptimization of antitumor treatment is the selection of the time of day where we receive an optimal balance between the sensitivity of the tumor to the drug and its toxicity.

A desynchronization (violation) of biorhythms is an early sign of functional disorders that occur long before the malignant tumors progression. In patients with malignant neoplasms the circadian rhythm synthesis of the main synchronizer of time of melatonin is disturbed which indicates desynchronosis. Thus, in case of cancerous lesions of the esophagus in the later stages (3-4) there is an increase melatonin synthesis at 9 times and absence of the characteristic peak at night. The increase in the number of breast cancer in women working at night. This is due to the inhibitory effect of light by night melatonin production, which is known to be a powerful anti-cancer agent in the body.

The presence of diurnal and seasonal rhythms of proliferative processes in a variety of tumors is the basis for chronodiagnostics, chronoprophylaxis and chronotherapy of cancer.

According to experimental and clinical data, it is advisable to prescribe cytostatics for the hours of the day when the tumor cells are in a phase of mitosis and are most sensitive to drug influence. In addition, it must be remembered that these drugs affect the activity and proliferation rhythm of normal tissues. Therefore, the main dose is administered during the greatest resistance of the organism to cytostatics. For a man this is in a morning and the first half of the day.

The principles of the chronotherapy of malignant neoplasms:

- In the phase of the mitotic cycle, when the tumor is most sensitive to the drug;
- When proliferating cells of normal tissues are most sensitive to the drug;
- When a toxic effect on the entire body cytostatic is less pronounced.

Radiation therapy of malignant tumors of the human skin gives the maximum effect when providing it in 12 hours, and in breast cancer – from 7 to 10 hours.