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Evaluation of Toxic Complications of Chronochemiotherapy in the Treatment of Malignant Tumor Diseases

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Annotation. comparative analysis of 120 patients who received chemotherapy and chronochemotherapy (chemotherapy was held at night) and who are in dispensary observation list in Andijan Oncologic dispensary were given in this research. Toxic effect of cytostatics was evaluated during procedures shown upon i.e. in 80-90 % cases different lever of toxicity occurs in patients.

Keywords: chemotherapy, chronochemotherapy, toxic complications.

Improving the effectiveness of treatment and preventive measures in modern medicine remains one of the pressing problems of Medicine [5,6,12]. This can be done by a chronobiological method in the conservative treatment of patients in finding a future solution to the problem [7, 9, 11, 13].

There are several methods of treating malignant tumor diseases, within which treatment with cytostatic drugs is widely used. In chemotherapy, the therapeutic result is always manifested along with a number of side effects, and these conditions are explained by the cytostatic effect of the cytostatic drug on a normal cell, in addition to a malignant tumor cell in oranism. In patients who receive nearly 80-90% chemotherapy, side effects of different manifestations are observed [12].

Currently, it has been established that a huge number of physiological processes that occur in the human body change during the day [1, 10, 11, 13], however, in the literature we have studied, there is very little data on the use of cytostatic drugs in oncology based on biological rhythms.

The first to record in science was the English writer John Wren in 1632 in his work "Herbal Treatise", which records daily rhythms [3, 13]. By the end of the XIX century, the science of daily rhythms began to be used in science, such terms as biorhythmology, the administration of drugs to the body based on daily rhythms, and the study of pharmacokinetics and pharmacodynamics of the drug – chronopharmacology, treatment based on daily rhythms – chronotherapy.

In recent years, chronopharmacology has been studied in all areas of Medicine [4, 13], but there has been little mention in the literature of chemotherapy in the treatment of oncological diseases based on daily rhythms. Chronochemotherapy is a section of chronotibbiot aimed at increasing the effectiveness of chemiopreparate and reducing its side effects, using cytostatic drugs based on the daily rhythm (circadian) [1,2,7]. Chronochemotherapy increases the cytostatic effect of chemiopreparations and reduces the side effects, complications of the drug [12].

Chemotherapy, based on biorhythms in oncology, has been found to prolong the survival of patients by 2 times, increase the effectiveness of treatment by 1.5 – 2 times, and reduce poisoning by the body [5, 8, 10, 12].

The data presented in the literature indicate that in typical (normal) cells according to biological rhythm, the metabolism of substances actively occurs during the day, while in the evening, on the contrary, the metabolism slows down [6,12]. The exchange of substances by the cancer cell (atypical cell) without breaking the bow into the law of biorhythm occurs equally actively at all times of the day, and the mitotic cycle of the atypical cell occurs precisely at night [12, 13]. The literature reports that different antiblastic effects were obtained when the same dose of cytostatic drugs was used at different times of the day and the side effects were partially reduced. This condition is explained by the fact that the mitotic cycle of the atypical cell occurs at night [6, 12].

The purpose of the work: to diagnose toxic complications of cytostatic drugs, which are used in the treatment of malignant tumor diseases, based on chronopharmacology.

Material and examination methods: 120 patients treated during the period 2012 – 2018, who were counted "D" in Andijan regional oncology dispensaries, were examined according to the "standard for the treatment and examination of malignant tumors"and received ad'yuvant, neoad'yuvant or symptomatic chemotherapy treatments.

All patients were subjected to extended general blood analysis, general urine analysis, biochemical blood analysis (bilirubin, transaminase, creatinine, mochevina, nitrogen mochevina), UTT and ECG examinations before treatment with the chemotherapy method, and appropriate schemes were selected in accordance with the treatment standard of cytostatic drugs and performed in the same way as traditional chemotherapy doses. General blood and urine analyses were seen repeatedly after chemotherapy treatments were completed. According to the above nazology, MAYO, FOLFOX, HELOX schemes, ver or er schemes in germ cancer, MAYO, FOLFOX – 4, HELOX schemes in colon cancer, PF Scheme in sub-lingual area cancer, PF Scheme in bacadaon neck cancer, CAF, CMF schemes in mammary cancer were selected.

Table 1. Distribution of patients by groups with respect to the nosological and disease stage.

№	Disease nazology	group	**n**	Stage of the disease					
				II		III		IV	
				n	%	n	%	n	%
1	Colon cancer	I	**20**	0	0	15	75,0	5	25,0
		II	**17**	2	11,8	11	64,7	4	23,5
2	Colon cancer	I	**18**	0	0	12	66,7	6	33,3
		II	**15**	3	20,0	8	53,3	4	26,7
3	Cervical cancer	I	**2**	0	0	0	0	2	100,0
		II	**14**	2	14,3	7	50,0	5	35,7
4	Germ cancer	I	**11**	2	18,2	7	63,6	2	18,2
		II	**9**	3	33,3	4	44,4	2	22,2
5	Ovarian cancer	I	**0**	0	0	0	0	0	0
		II	**5**	0	0	3	60,0	2	40,0
6	Mammary gland cancer	I	**6**	1	16,7	5	83,3	0	0
		II	**0**	0	0	0	0	0	0
7	Pancreatic cancer	I	**3**	0	0	0	0	3	100,0
		II	**0**	0	0	0	0	0	0
Total		***I***	***60***	***3***	***5,0***	***39***	***65,0***	***18***	***30,0***
		II	***60***	***10***	***16,7***	***33***	***55,0***	***17***	***28,3***
Total			**120**	**13**	**10,8**	**72**	**60,0**	**35**	**29,2**

Group 1 consisted of 60 patients – "D" in the regional oncology dispensaries and performed ad'yuvant, neoad'yuvant or symptomatic chemotherapy treatments in the evening (at night).

Chronochemotherapy procedures were performed on 20 (33.3 %), germ cancer – 11 (18.3 %), colon cancer – 18 (30 %), mammary gland cancer – 6 (10 %), sub – lingual cancer – 3 (5 %), cervical cancer – 2 (3.33 %) patients. Of the patients, 22 (36.7 %) were female and 38 (63.3 %) were male. 3 (5 %) of patients received treatment in Phase II, 39 (65 %) received treatment in Phase III and 19 (10 %) received treatment in Phase IV of the disease (Table 1).

Group 2-60 patients who are counted "D" in regional oncology dispensaries have been examined and undergo ad'yuvant, neoad'yuvant or symptomatic chemotherapy treatments. In terms of the nosological composition of the patients, 17 (28.3%) patients with colon cancer – 9 (15 %), colon cancer – 15 (25 %), ovarian cancer – 5 (8.3 %), cervical cancer – 14 (23.3 %) patients underwent conventional chemotherapy. 27 of the patients (45 %) were female and 33 (55%) were male. 3 (5 %) of patients received treatment in Phase II, 39 (65 %) received treatment in Phase III and 19 (10 %) received treatment in Phase IV of the disease (Table 1).

Results and their opposition:

Treatment for Group 1 patients was done using chronochemotherapy. In this case, one of the schemes of the treatment standard was selected, and the drugs were poured into the body in the evening (after dinner).

In 2 groups of patients, one of the schemes of the standard of treatment was selected, and drugs were poured into the body during the day.

All patients after murolaja side effects were studied based on the general poisoning criterion assessment table established by the World Health Organization as a whole (table 2).

2 table. Side effects observed in patients receiving chemotherapy and chronochemotherapy and their degree of poisoning:

№	Characters		Poisoning rate									
			0		I		II		III		IV	
			N	%	n	%	n	%	n	%	n	%
1	Anorexia	I	2	6,4	8	25,8	12	38,7	9	29,1	0	0
		II	0	0	5	15,6	7	21,8	18	56,3	2	6,3
2	Nausea	I	0	0	10	27,0	19	51,3	8	21,7	0	0
		II	0	0	2	5,3	24	63,2	12	31,5	0	0
3	Vomit	I	0	0	9	60,0	5	33,3	1	6,7	0	0
		II	0	0	4	22,2	8	44,4	5	27,8	1	5,6
4	Zarda	I	7	31,8	10	45,5	3	13,6	2	9,1	0	0
		II	4	14,4	14	50,0	5	17,8	5	17,8	0	0
5	Stomatitis	I	1	12,5	6	75,0	1	12,5	0	0	0	0
		II	0	0	10	83,4	1	8,3	1	8,3	0	0
6	Taste disorders	I	11	55,0	7	35,0	2	10,0	0	0	0	0
		II	8	36,4	10	45,4	4	18,2	0	0	0	0
7	Diarrhea	I	5	62,5	2	25,0	1	12,5	0	0	0	0
		II	5	50,0	3	30,0	2	20,0	0	0	0	0

Group 1 patients experience anorexia at 51.6 %, nausea at 61.7 %, vomiting at 25 %, dice at 36.6 %, stomatitis at 13.3 %, taste disorders at 33.3%, and diarrhea at 13.3%.

Group 2 patients experience anorexia at 53.3 %, nausea at 63.3 %, vomiting at 28.3 %, dice at 46.6 %, stomatitis at 20 %, taste disorders at 36.6%, and constipation at 16.6%.

Table 2 shows that all side effects showed a milder extent in Group 1 patients compared to Group 2 patients.

Conclusion: The result of scientific research showed that patients undergoing chronochemotherapy treatments had a lower and milder level of body poisoning of 1.11 marotiba according to traditional chemotherapy.

Literature used:

1. Арушанян Э.Б., Батурин В.А. Основы хронофармакологии, Ставрополь, 1989. 67 с.
2. Васильева Г. С. Хронобиология и хронотерапия злокачественных новообразований (экспериментально—клинические исследования): Автореф. дис. д—ра биол. наук. — Алматы, 1994 — 78 с.
3. Заславская Р. М. Хронодиагностика и хронотерапия заболеваний сердечно — сосудистой системы.— М.: Медицина, 1991.— 320 с.
4. Каримов М.А., Махмудова Р.Ю., Халилова М.С., Исмаилов О.Ю., Нуратова Х.Х., Хакимов Х.М./ ОЦЕНКА ТОКСИЧЕСКИХ ОСЛОЖНЕНИЙ ХРОНОХИМИОТЕРАПИИ ПРИ ЛЕЧЕНИИ РАКА ПРЯМОЙ КИШКИ https://scholar.google.com/scholar?oi=bibs&cluster= 9176900744728983178&btnI=1&hl=ru
5. Комаров Ф. И., Захаров А. В., Лисовский В. А. Суточный ритм физиологических функций у здорового человека.— Л.: Медицина, 1966.— 200 с.
6. Комарова Ф.И., Рапопорта С.И. Хронобиология и хрономедицина / Под ред.– 2-е изд. – М.: Триада-Х, 2000. – 488 с.
7. М.А. Каримов, М.А. Абдулҳамидов, Ж.А. Ғанижонов, Х.Б. Хайдаров, Д.Р. Назиржонов. ТЎҒРИ ИЧАК РАКИНИ ДАВОЛАШДА ХРОНОХИМИОТЕРАПИЯНИНГ ТОКСИК АСОРАТЛАРИНИ БАҲОЛАШ. Доктор ахборотномаси № 1—2018. С.- 48-51. https://scholar.google.com/scholar?oi=bibs&cluster=4411911817048589228&btnI=1&hl=ru
8. Моисеева Н. И., Сысуев В. М. Временная среда и биологические ритмы.— Л.: Наука, 1981.— 127 с.
9. Оранский И. Е., Царфис П. Г. Биоритмология и хронотерапия (хронобиология и хронобальнеофизиотерапия).— М.: Высш. шк, 1989.— 159 с.
10. Улащик В.С., биологические ритмы и хронотерапии, журнал. Медицинские новости. 1996 г. №2.
11. Чиссов В. И., Давыдов М. И. Онкология национальное руководства. — Москва, Гоэтар медия, 2014.— 483 с.
12. Beryozkin M.V., chronofarmakology. 1977, 259 p.
13. Karimov M.A., Makhmudova R.Y., Abduraimova R.A., O'rinboev M.R., Beknazarov A.T., & Nurkabilov O.T. (2023). ASSESSMENT OF TOXIC COMPLICATIONS OF CHRONOCHEMOTHERAPY IN THE TREATMENT OF MALIGNANT TUMOR DISEASES. *International Journal of Medical Sciences And Clinical Research*, *3*(04), 129–134. https://doi.org/10.37547/ijmscr/Volume03Issue04-21