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BLOODGROUP AFFILIATION IN MELANOMA MALIGNA PATIENTS

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ABSTRACT: *130 patients (66 male and 64 female) suffering from Melanoma maligna are studied. The connection between the illness and the blood group affiliation according to the ABO systems and the Rh. factor is traced. Most of the patients belong to 0 blood group (39,23%), followed by A (23,25%), B (19,38%) and AB (18,14%) group. The significance of group O ($p<0,05$) and AB ($p<0,001$) is considerable. The results show a considerable decrease in the percentage of A group ($p<0,05$) and of the negative Rh. factor ($p<0,001$). On the basis of the results obtained we can admit that belonging to 0 and AB groups and the positive Rh factor appear to be a part of the hazardous factors for the illness Melanoma maligna and its development.*

KEY WORDS: *Melanoma maligna, bloodgroup systems ABO, Rh factor*

In Bulgaria blood groups are identified for the purposes of clinical medicine, for studying regional and ethnic differences, as well as for studying their relation to the frequency of certain health conditions. Most of the studies conducted are related to malignant conditions. The studies of the relation between AB0 and Rhesus factor characteristics of the patient and the appearance of these illnesses are focused on the following types of carcinoma: Ca vulvae, Ca uteri, Ca ovarii, Ca glandulae mammae, Ca glandulae prostatae, Ca testis, Ca penis, Ca renis, Ca vesicae urinariae, Ca ventriculi and Ca coloni [1, 2, 3, 4, 5].

The object of the present study is the malignant skin tumor Melanoma maligna. This type of carcinoma is considerably rare - it accounts for only 5 % of all malignant tumors [6].

Aim of the study: To find out if the blood type of the patient is linked to the appearance of Melanoma maligna condition.

Material and methods

The study was performed on 130 patients suffering from Melanoma maligna (66 male and 64 female). They were diagnosed and treated in the oncology ward of the Fifth City Hospital in Sofia over the period of 1991 - 2011. The patients' blood group and Rhesus factor were identified by means of standard test serums. The results were compared with the data obtained from a control group of healthy representatives of the Bulgarian population [7]. The comparison was made by means of T-criterion. The results of the study are presented in Table 1.

Results and discussion

Table 1. Frequency of blood groups from the systems AB0 and Rhesus factor in patients with Melanoma maligna and patients from the control group (%)

Groups		0	A	B	AB	Rh+	Rh–
Patients with melanoma maligna	n	**51**	30	25	24	126	4
	%	**39,23**	23,25	19,38	18,14	96,92	3,08
Control group	n	324	**472**	184	82	916	164
	%	31,67	**43,70**	18,04	7,59	84,81	15,19

AB0 system

The results of the study of Melanoma maligna patients' blood type show the following distribution of blood types in terms of their frequency of occurrence: the most frequent blood type is 0 (39,23%), followed by blood type A (23,25%), and types B (18,38%) and AB (18,14%) coming third and fourth respectively. In comparison with the control group [7] the patients with Melanoma maligna are not characterised by the typical for the Bulgarian population distribution of blood types - A, 0, B, AB. The results show a higher frequency of 0 blood type with 7,56% and AB type - with 10,55%, with a considerable decrease of A blood type with 20,45%. The representative sample of patients with these blood types differs considerably from the control group (in 0 blood type – $p<0,05$, in A type – $p <0,05$, and in AB type - $p<0,001$) (Table 1, Figure 1).

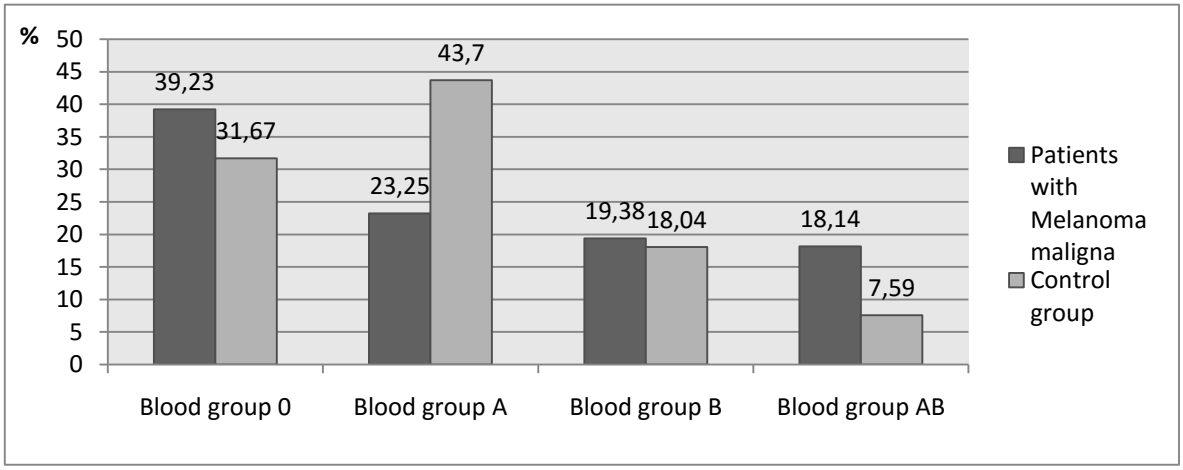

Figure 1. Frequency of blood types of ABO system in patients with Melanoma maligna and patients from the control group (%)

Rhesus factor system

The studied group of patients show the following distribution of Rhesus factor types: positive - in 96,92% of the cases, and negative - in 3,08%. In comparison with the control group of the Bulgarian population [7], in which the figures are 84,81% for the positive and 15,19% for the negative Rhesus factor [7], there is a considerable increase of the positive Rh factor with 12,11% – $p<0,001$ (Table 1, Figure 2).

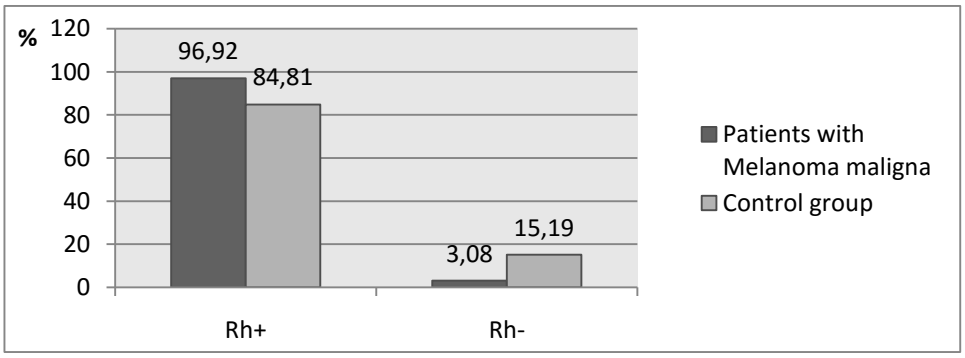

Figure 2. Frequency of the blood types in Rh system in patients with Melanoma maligna and patients from the control group (%)

The results of the study show that there isn't a significant difference in terms of gender distribution in patients suffering from Melanoma maligna (50,74% of the patients are male and 49,26% female). According to Botev [8] the condition if more common in women than in men. Melanoma maligna is most frequently found in Australia and New Zealand - 40 out of 100 000 people, the USA - 10 out of 100 000 people, Europe - 12 out of 100 000 people, with 10 - 20 out of 100 000 people in Scandinavian countries and 3 - 5 out of 100000 in

the Mediterranean region. In Bulgaria the number of people suffering from the condition is 3 - 3,5 out of 100000 [8, 9, 10].

AB0 system

The distribution of blood types typical of the Bulgarian population - A, 0, B, AB - is not observed in patients suffering from Melanoma maligna. Among the patients the figures are higher in those with blood type 0, and the order of the types is 0, A, B, AB. Only two other types of carcinoma studied by us - Ca vulvae [5] и Ca renis [3] show a similar distribution of figures. It is worth mentioning that the results of the present study as well as the results of studying Ca renis show a significant increase ($p<0,001$) in the share of AB type group. Increase of AB type together with increase in B type group ($p<0,05$) was found in the results of patients suffering from Ca vesicae urinariae [11].

In most of the studied so far carcinoma types the figures are significantly higher in patients with A blood type as compared with the figures for the Bulgarian population [7] - from 48,13% for Ca glandulae mammae [1] to 56,57% for Ca penis [3]. Carcinoma types which show significant increase of the illness figures for this group are Ca uteri, Ca ovarii, Ca glandulae mammae, Ca glandulae prostatae - $p<0,01$ [1]; Ca pancreatis - $p<0,05$ [4]; Ca vesicae urinariae [11], Ca renis [11], Ca penis and Ca testis - $p<0,001$ [3]. Higher figures were found without significant differences in Ca ventriculi and Ca coloni [1].

The analysis of the available literary sources [8, 12] shows that there are three main predispositions for the appearance and development of Melanoma maligna:

1. Family predisposition - in about 10% of cases on the basis of chromosomes 1, 6, 7 and 10;
2. Ultraviolet rays;
3. Phenotype of the individual (colour of hair, colour of skin, etc.).

On the basis of the results obtained in the study of patients with Melanoma maligna it can be assumed that blood type 0 and AB, as well as Rh+ can be considered risk factors for the appearance and development of the condition. Our findings make us add another important predisposition for the appearance of Melanoma maligna - the patient's blood type. The treatment for this condition is mainly through surgical intervention, and in 95% of all cases there is no relapse [13, 14, 15, 16].

Conclusions:

1. The results of the study show significantly high frequency of blood types 0 and AB as well as Rh+ in patients with Melanoma maligna in comparison with the control group of healthy individuals from the Bulgarian population.

2. It can be assumed that a patient's blood type is one of the risk factor for the appearance and development of Carcinoma maligna.

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