Journal scientific and applied research, vol. 9, 2016
Association Scientific and Applied Research
International Journal

Original Contribution ISSN 1314-6289

FREQUENCY OF BLOOD TYPES FROM SYSTEMS AB0 AND RHESUS FACTOR IN PATIENTS WITH CARCINOMA OF THE VAGINAE

Milen Boichev*, Velislav Todorov, Maria Boycheva*, Volodia Georgiev, Cvetan Minkov, Rada Georgieva

SOFIA UNIVERSITY, FACULTY OF BIOLOGY, DEPARTMENT OF ZOOLOGY AND ANTHROPOLOGY, 8 DRAGAN TZANKOV STR
**KONSTANTIN PRESLAVSKY UNIVERSITY OF SHUMEN, FACULTY OF NATURAL SCIENCE, DEPARTMENT OF BIOLOGY,115 UNIVERSITETSKA STR*

ABSTRACT: *The research included 115 female patients with carcinoma of the vagina (Ca vaginae). Their blood types belonging to the systems AB0 and Rhesus factor were studied. Comparing the control group of Bulgarian population statistically significant differences in the distribution of all types of AB0 system were detected. The increase in blood type A (with 23, 26% - to 66, 96%) and the decrease in blood type 0 (with 18, 54% - to 19, 13%) are especially obvious. There is no difference in Rh system. It can be assumed that having blood type A appears to be one of the risk factors for the emergence and development of the disease in the female patients.*

KEY WORDS*: blood types systems ABO and Rhesus factor, Ca vaginae*

A significant part of our research on blood types of systems AB0 and Rhesus factor is connected to the emergence and development of a number of diseases. Particular attention is paid to malignant neoplasms. In this regard and diseases of the breast and female genital organs are tracked - Ca glandulae mammae, Ca uteri, Ca ovarii [1], Ca vulvae [2]. Their emergence and development as well as other neoplasms may be associated with a number of factors. Hereditary predisposition, the way of life and the influence of environmental factors are considered fundamental. Hereditary predisposition is not normally associated with particular biological characteristics. Maybe we should be looking, albeit indirectly, for the relationship of neoplasms with blood types belonging to systems AB0 and Rhesus factor.

Aim of the study: To examine the relationship between the emergence and development of Ca vaginae with female patients' blood types belonging to systems AB0 and Rhesus factor.

Material and methods:

The present study included 115 female patients with Ca vaginae. They were diagnosed with the disease and treated in the oncology ward of Fifth City Hospital in Sofia and the National Hospital Oncology in Sofia in the period 1990-2014. Their blood types from systems AB0 and Rhesus factor were studied. The patients' blood types and Rhesus factor were identified by means of test serums. The results have been compared to the data of excerpt of Bulgarian population [3]. The comparison was made via the $\chi 2$ criterion.

Results and discussion

The data of the study are presented in table 1 and figure 1 and 2.

Table 1. Frequency of the blood types from systems AB0 and Rhesus factor in patients with Ca vaginae and the control group (%)

Blood types		O	A	B	AB	Rh+	Rh-
Patients with Ca vaginae n 115	n	22	77	14	2	103	11
	%	19,13	66,96	12,17	1,74	90,43	9,57
Control group n 1080	n	342	472	184	82	916	164
	%	31,67	43,70	18,06	7,59	84,81	15,19

AB0 system

The frequencies of included female patients' blood types are as follows: for group 0 –19,13%, for group A – 66,96%, for group B – 12,17% and for group AB – 1,74%. Distinct differences are observed when comparing the distribution of the blood types in control excerpt [3], in which the data is: group 0 – 31,67%, group A – 43,70%, group B – 18,06% and group AB – 7,59%. In group A reported a strong increase with 23,26% to 66,96%. Decrease in the values in the other group is detected, though in varying degrees: in group 0 – with 13,54% to 19,13%, in group B – with 5,89% to 12,17% and in group AB – with 5,85% to 1,74%. Significant differences are observed about the cross section as a whole in comparison to the control section ($K=3$; $\chi 2=11,3$; $p<0,001$) – table 1, figure1.

This study examined the connection between blood group belonging to systems AB0 and Rh factor and probability of emergence and development of another of malignancy of the female genital organs – Ca vaginae. The reason for this is the received results so far of Ca glandulae mammae, Ca uteri, Ca ovarii and Ca vulvae, which were monitored.

Ca vaginae is a relatively rare disease of the female reproductive organs. In our country it occurs in 0,10 / 100000 people and accounts for 0,2% of all malignant diseases of the Bulgarian population [4]. It is less common than the other tested by us: Ca glandulae mammae - 2,73 / 100000 or 12,9%, Ca uteri - 61,4 / 100 000 or 16,2%, Ca ovarii - 2,62 / 100000 or 5,3% [1], and Ca vulvae - 2,60 / 100,000 or 0,70% [2].

Most often this disease occurs in older women (postmenopausal), but also though very rarely, in younger women [5] - in our study in a 18-year-old female patient.

Histologically, the onset of carcinoma is due to disturbances in the flat epithelial cells constituting the surface layer of the vaginal mucosa [6]. The cause of this cancer is not known, but there are suggestions that this could be a human papillomavirus and basic types 16 and 18. The emergence of dysplasia may not last long, but malignancy appears increasingly [5]. Particular attention should be paid to the leukoplakia, the thickening, infiltration, nodes and ulcerosa [6]. Excessive malignancy may be due to the close proximity of the organ with a rich network of lymphatic vessels [6].

In Ca vaginae can be identified three macroscopic forms [5]:

1. Ekzofiten - grows towards the lumen of the body;
2. Ulcerative - developed in depth;
3. Eroded - nascent on the surface and in depth, increasingly deep layers.

According to the scope of the process the following clinical stages can be determined [6].

1. Only in the rear wall of the vagina;
2. It covers tissues and around the vagina, without reaching the wall of the pelvis;
3. Reaches the walls of the pelvis;

4a. It covers the wall of the bladder and the rectum and possibly extends beyond the pelvis;

4b. The process of metastasis extends to distant organs.

When the disease is detected, it is usually too late for successful treatment. In this connection, regular gynecological examinations (especially

after menopause) are recommended, allowing early diagnosis [6]. The difficulties come from undetected symptoms as malignancy is located in the epithelium [5].

Treatment in early stages is through surgery. In later stages, apply radiotherapy - percutaneous radiotherapy and brachytherapy. In all cases, the prognosis is for bad outcome, due to the nature of the disease, leading to infiltration into adjacent organs and the development of metastases [6].

A significantly higher incidence of blood group A compared with the control group is reported in most of the tumors of the female genital organs we studied: Ca ovarii - 49,55%, $p < 0,01$; Ca uteri - 49,55%, $p < 0,01$; Ca glandulae mammae - 48,33%, $p < 0,01$. Only in Ca vaginae was noted significantly greater prevalence of blood group 0 - to 47,42%, $p < 0,05$.

In none of the researched diseases of the system Rhesus factor have significant differences been reported in comparison to the control group. Frequencies in Ca uteri and Ca glandulae mammae [1] are almost identical to those of the control. In Ca vulvae are recorded lower values for Rh(–) 3,75%[2].

In patients with the Ca vaginae significant changes of individual groups of the AB0 system are found in comparison with the control group. Above all, a significant increase is detected in the value of blood type A. This fact gives grounds to assume that there is a certain correlation between this blood type and the emergence and development of the disease. Probably belonging to this group is one of the risk factors (predisposition) of the emergence of this cancer.

Conclusions:

1. The distribution of blood types of AB0 system in patients with Ca vaginae differs significantly ($p<0,001$) from that of the control group. This is mainly due to the very high levels of blood type A – 66,96%.
2. We assume that belonging to blood types A is one of the risk factors for the onset and development of Ca vaginae.

References:

[1]. Maksimova, S., V. Todorov, A. Timcheva. Sistemi krvnih grupa ABO i Rezus factor kod nekih oboljenja od socijalnog značaja, Journal of the anthropologycal society of Jugoslavia, 1997, 33, p. 119-124.

[2]. Todorov, V., S. Maksimova. Krvnogrupni sistemi ABO I Rh factor kod pacijenta sa karcinomom vulvae, Glasnik antropoloskog drustva Srbije, 2011, 46, p. 179-181.

[3]. Todorov, V. Promene antropoloških karakteristika u toku starenja, Doctorate thesis, Belgrade,1998-1999, p. 72-77.
[4]. Dimitrova, N., M. Vukov, M. Valeriev. Cancer condition in Bulgaria - 2011. National oncology hospital, 2013, 22, 60 p.
[5]. Tontcheva, K. C., L. Krasteva, V. Tsekova. Ca vaginae, Medical Oncology, Paradox, 2012, p. 115-119.
[6]. Rudolf, Sv. Ca vaginae, Dysplasia vaginae. Onkologija, Medicinski fakultet Beograd, 2009, p. 205-216.

The present study is conducted with the financial help of Project № РД-08-66/10.02.2016, fund "Scientifically studies" of the University of Shumen "Bishop Konstantin Preslavski".