

The Distribution of the ABO and Rhesus Blood Groups among the Albanian Population in the Southwest Part of Kosovo (District of Prizren)

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ABSTRACT The data present distribution of the ABO and Rh (D) blood groups between inhabitants of southwest Kosovo (District of Prizren). It is shown that frequency of allele *O* is higher followed by frequency of allele *A* and *B*. the frequency of Rh- negative varies from 8 to 21 percent. The present study shows to be similar with results reported in West European Countries.

INTRODUCTION

ABO and Rh (D) blood groups are useful in study of genetic population in different countries to investigate the genetic constitution and the migration patterns of population as well as in resolving certain medico-legal issues, particularly the disputed parentage. Thus, the knowledge of blood group antigens and their distribution is very useful for the transfusion services and clinical studies, for example, disease association research and in population genetics and in anthropology.

It is imperative to have baseline data on the distribution of various blood groups in any human population group (Gramong 1995; Garratty et al. 2000; Eastlund 1998; Mollison 1993; Dacie 2001; Khan 2016; Rehman et al. 2015). The present study was carried out to find the distribution of ABO and Rh (D) blood groups in Albanian population inhabiting the Southwest region of Kosovo (District of Prizren).

MATERIAL AND METHODS

The subjects of this study were donor patients which came for routine medical examinations in

main hospital of District Prizren. A total of 1.212 samples from different sub-districts, that is, 327 from Prizren, 196 from Suhareka, 263 from Sharri, 173 from Rahovec, 125 from Malisheva and 218 from Hasi sub-district were collected. The ABO and Rh (D) blood groupings were carried out in the blood bank using the standard technique, using only one drop of the whole blood mixed with one drop of appropriate anti-sera and shaken gently. The microscope examination for doubt case is done or the results were confirmed by reverse grouping using known group A and group B red cells (Dacie 2001). The data on the frequency distribution of the ABO and Rh (D) blood groups is presented as percentage and as a comparison of the frequency of blood groups observed between populations of different sub-districts and it was performed using the chi-square test.

RESULTS

The present results found that the frequency of the ABO blood groups is found in the Albanian population in southwest Kosovo (District of Prizren). In Table 1 the frequency of allelic frequency for all sub-districts is present. It is found that frequency of allele *O* is higher in sub-districts Rahovec and Sharri compared with Prizren, Malisheva, Hasi and Suhareka sub-districts. The frequency of allele *A* is higher in Hasi and Suhareka

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Table 1: Blood group O, A, B and AB distribution in percentage among inhabitants in southwest part of Kosovo

Blood group	Prizren	Rahovec	Sharr	Suhareka	Malisheva	Has	Total
O	45.45	47.15	47.50	37.70	44.44	39.13	43.56
A	42.98	33.33	32.50	46.72	48.48	47.83	41.97
B	8.26	13.82	14.17	13.11	6.06	12.17	11.27
AB	3.31	5.69	5.83	2.46	1.01	0.87	3.19
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00

sub-districts compared with Malisheva, Prizren, Rahovec and Sharri sub-districts. The frequency of allele B is higher in Suhareka and Sharri sub-districts compared with Rahovec, Hasi, Prizren and Malisheva sub-districts.

In Table 2, the frequencies for ABO in all sub-districts are presented. The frequency for A is higher in Hasi sub-district (0.3217) followed by Suhareka sub-district (0.3101) and Malisheva sub-district (0.3022). For B the frequency is the highest in Dragash sub-district (0.1036) followed by Rahovec sub-district (0.1030) and Suhareka sub-district (0.0937). For allelic O the frequency is the highest in Dragash sub-district (0.6941) followed by Rahovec sub-district (0.6784) and Prizren sub-district (0.6770). For A it is higher for Prizren sub-district (0.3367) followed by Dragash sub-district (0.3166) and Malisheve sub-district (0.2615). For allelic B the higher frequency is found in Suhareke sub-district (0.1471), followed by Hasi sub-district (0.1329). For allelic O (*Rh-*) the higher frequency is found in Rahovec sub-

district (0.7748), followed by Malisheve sub-district (0.7385) and Hasi sub-district (0.6834).

In Table 3, the frequency for Rh+/- in all sub-districts is presented. For Rh+ (*D*) it is higher for Dragash sub-district 0.92 and Rahovec sub-district (0.91). For Rh- (*d*) it is higher for Prizren sub-district (0.21), followed by Hasi sub-district (0.13).

Pearson's Chi-square test was not statistically significant between blood groups A, B, AB, and O in Albanian population living in southwest Kosovo (District of Prizren) (Table 4). Pearson's Chi-square test revealed statistically significant differences between blood group combinations A/Rh, B/Rh, AB/Rh, and O/Rh in the Albanian population inhabiting southwest Kosovo (District of Prizren) (Table 5).

DISCUSSION

In the present study the frequency distribution of the ABO and Rh (D) blood groups in the Albanian population inhabiting southwest part of Kosovo

Table 2: The phenotypic frequency distribution of ABO blood group between sub-districts of southwest Kosovo

Allelic relative frequencies	Prizren	Rahovec	Sharr	Suhareka	Malisheva	Has	Total
O	0.6742	0.6867	0.6892	0.6140	0.6667	0.6255	0.6600
A	0.2662	0.2104	0.2052	0.3048	0.2973	0.3070	0.2648
B	0.0587	0.0942	0.0961	0.0988	0.0440	0.0907	0.0804
	1.0	1.0	1.0	1.0	1.0	1.0	1.0

Table 3: The phenotypic frequency distribution of Rh+/- blood group between sub-districts of southwest Kosovo (Frequency of Rhesus Blood Group)

Rhesus blood group	<i>Rh(+)</i>			<i>Rh(-)</i>		
	<i>N</i>	%	Allele	<i>N</i>	%	Allele
Prizren	96	79.40	0.8	25	20.60	0.21
Rahovec	113	91.90	0.91	10	8.20	0.08
Dragash	110	91.70	0.92	10	8.30	0.08
Suharekë	106	87.00	0.89	16	13.10	0.12
Malishevë	88	88.90	0.89	11	11.20	0.11
Has	100	87.00	0.87	15	13.00	0.13
Total	613	87.65	0.88	87	12.40	0.12

Table 4: Pearson's Chi-square test for the distribution of the ABO blood groups between populations of sub-districts in southwest Kosovo (District of Prizren)

	Value	df	Asymptotic statistical significance (two-sided)
Pearson's Chi-square test	23.511a	15	0.074
Likelihood-ratio-test	24.929	15	0.051
Number of valid observations	700		

(District of Prizren) was determined. There is only one study available in literature that describes the frequency distribution of these blood groups in Albanian population from central and eastern part in Kosovo (District Prishtina) (Miladinovic 1972). Among them the most common allele and gene

Table 5: Pearson's Chi-square test for blood group combinations A/Rh(D)⁺, B/Rh(D)⁺, AB/Rh(D)⁺, and O/Rh(D)⁺ between populations of sub-districts in southwest Kosovo (District of Prizren)

	Value	df	Asymptotic significance (two-sided)
Pearson's Chi-square test	54.916a	35	0.017*
Likelihood-ratio-test	54.002	35	0.021
Number of valid observations	700		

frequencies is *O*, followed by allelic frequencies *A* and allelic frequencies *B*.

On the other hand, the present study in the Albanian population in southwest Kosovo (District of Prizren) showed a comparative decrease in the frequency of allelic relative frequencies *O* and *A*. It seems that the distribution of the allelic frequencies for ABO and Rh (D) blood groups in southwest Kosovo observed was similar with that among the Europeans and the Caucasians (Bashwari et al. 2001; Vengelen-Tyler 1996).

The allelic frequency for *A* was found just as frequent as in some nationalities as *O* and that was clearly the case in the Caucasians in the Europe and the USA. It appears also that the high incidences of the alleles frequencies of *O* and *B* are characteristic of certain nationalities such as the Iranians, Arabs,

Chinese, Africans, Asians, Bengalis and Pakistanis (Khaskheli 1994; Khan et al. 2016; Rehman et al. 2015). The Albanian inhabitants from southwest Kosovo (District of Prizren) studied here demonstrate the ABO phenotype distribution similar to that reported in Western Europe. Such studies may help in formulating a baseline data for future investigations.

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