

## EVALUTION OF SOME BIOCHEMICAL PARAMETERS OF BLOOD AND CELLULAR IMMUNITY IN SHEEP-DOGS OF DIFFERENT GENOTYPE

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### Abstract

A part of the interior characteristics of domestic animal appear to be determination of basic physiological parameters in blood. The functional status of phagocytosing cells in blood is one of the basic parameters of cellular immunity. In our work we aimed at the evaluation of the given parameters in various types of sheep-dogs. The analyses can give a preliminary picture on the scale of reference values in various types of dogs.

A part of the interior characteristics of domestic animal breeds appear to be determination of basic physiological parameters in blood. From the veterinary view, the parameters of cellular immunity are of great importance. In our work we aimed at the evaluation of the given parameters in various types of sheep-dogs.

The literary data concerning the parameters of protein metabolism are given by Konrad et al. /1990/. The values of protein fractions are compared with those given by Kudrjavceva /1974/, Sova et al. /1978/ and others.

Vetvička et al. /1982/, Mareček-Prochazkova /1986/, Vrtiak-Svrček /1981/, Hipikova et al. /1993./ and others reported the evaluation of cell-mediated immunity parameters including methodological data.

### Materials and methods

Examination was performed in two phylogenetically different groups of dogs. 1st group - sheep-dogs of the European type /10 German sheep-dogs/. 2nd group - white sheep-dogs of Asian origin /10 Slovak long-haired sheep-dogs/.

Blood was withdrawn from vena saphena parva. The basic examinations were carried out by the routine biochemical and hematological methods. The phagocytic activity /PA/ of blood leucocytes, % of phagocytosing cells /PC/ and index of phagocytic activity /IPA/ were observed according to Vetvička et al. /1982/. The INT test was carried out according to the method of Mareček, Prochazkova /1986/. Results were processed by way of variation - statistically, interbreed differences were tested by the t-test.

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*Result and discussion*

The results are presented in the table part 1-4. Some significantly higher values for the benefit of the German sheep-dogs breed /triglycerides, urea, albumin fractions/ were found after comparison of the biochemical parameters. On the contrary, in the Slovak long-haired sheep-dogs significantly higher values were found in beta and gamma globulins as well as the A/G quotient. No pronounced interbreed differences were recorded in the parameters of cellular immunity. The biochemical and immunobiological analyses can give a preliminary picture on the scale of reference values in phylogenetically various types of dogs.

Tab. 1 - STATISTICAL VALUE THE BLOOD BIOCHEMICAL PARAMETERS IN THE DIFFERENT DOG'S GENOTYPE

Parameter	Group I			Group II			Testing difference
	$\bar{x}$	s	v	$\bar{x}$	s	v	
Total lipide g/l	6.546	0.911	13.88	6.989	1.131	16.40	- 0.352
Triglycerol mmol/l	0.960	0.115	11.98	0.831	0.116	13.96	0.129+
Cholesterol mmol/l	5.396	0.901	16.70	6.101	0.155	18.93	- 0.705
Glucose mmol/l	4.564	0.811	17.77	3.952	0.889	22.49	0.612
Urea mmol/l	5.120	0.889	17.36	4.017	1.018	25.34	1.103+

Tab. 2 - VALUE TOTAL PROTEINS AND PROTEIN FRACTIONS IN THE DOGS

Parameter	Group I			Group II			Testing difference
	$\bar{x}$	s	v	$\bar{x}$	s	v	
Total proteins g/l	67.021	7.080	10.56	62.098	7.189	11.57	4.923
Albuminy%	46.970	7.330	15.60	36.217	4.314	11.91	10.753++
Alpha 1 %	11.119	1.224	11.01	8.564	3.096	36.15	2.555
Alpha 2 %	8.705	1.949	22.38	9.823	3.023	30.77	-1.118
Beta 1%	5.373	1.490	27.73	5.996	1.142	19.04	-0.623
Beta 2%	11.626	2.955	25.42	18.130	5.276	29.10	-6.504++
Gamma %	16.210	1.930	11.91	21.270	2.629	12.36	-5.06++
A/Q	0.872	0.210	24.86	0.573	0.104	18.24	0.299++

Tab. 3 - THE PHAGOCYtic ACTIVITY OF LEUCOCYTES IN THE DOGS TYPE EUROPEAN AND ASIATIC

Parameter	Group I			Group II			Testing difference
	$\bar{x}$	s	v	$\bar{x}$	s	v	
Phagocytizing leukocytes %	34.714	5.559	16.01	35.000	6.324	18.07	-0.286
Leukocyte phagocytic index	6.871	1.404	20.43	7.650	1.624	21.23	-0.779
Phagocytizing neutrophils %	63.786	12.038	18.87	64.025	5.631	8.79	-0.239
Neutrophil phagocytic index	6.914	1.531	22.14	8.275	1.712	20.68	-1.361
Neutrophils%	53.857	7.967	14.79	54.750	6.860	12.53	-0.893

Tab. 4 - THE VALUES OF INT TEST IN THE DOGS TYPE EUROPEAN AND ASIATIC

Parameter	Group I			Group II			Testing difference
	$\bar{x}$	s	v	$\bar{x}$	s	v	
Stimulate cells	0.306	0.075	24.53	0.321	0.093	28.97	-0,015
Nonstimulate cells	0.200	0.049	24.50	0.181	0.038	20.99	0.019
Metabolic activity index	1.653	0.342	20.69	1.889	0.306	16.20	-0.236

Tab. 5 - STATISTICAL VALUE OF WHITE BLOOD COUNT IN THE DOGS TYPE EUROPEAN AND ASIATIC

Parameter	Group I			Group II			Testing difference
	$\bar{x}$	s	v	$\bar{x}$	s	v	
Le G/l	10.500	0.991	9.440	9.800	0.901	10.880	0.700
Ly %	44.143	7.477	16.940	41.937	8.470	20.200	2.206
Mo %	0.857	0.720	74.010	0.875	0.640	73.240	-0.018
Ns %	53.857	7.967	14.790	54.750	6.860	12.530	-0.893
Eo %	1.143	0.690	60.380	2.438	1.546	63.410	-1.295

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