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CLINICAL AND HEMATOLOGICAL PARAMETERS OF CLINICALLY HEALTHY DOGS.

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Laboratory analysis is meaningless if you do not know what figures are to be in healthy animals, but the range of clinical and hematological parameters differ in each literature source. This range is called - reference values or reference standards, intervals, average, "normal" values in the scientific sources. They give an indication of whether the test result is normal or abnormal.

Key words: dogs, blood

Introduction. Every reference values are based on consideration of the number of species, species diversity, age, sex and other factors, and the number of "healthy" animals, optimum required in each category to create reference values. The best reference indicators are indicators of the patient's own normal to the disease, as some animals may have unique features. The costs of such studies need not small expenses[1].

In veterinary medicine, basic blood tests - is the general and biochemical analysis. General analysis of blood provides information about infectious, inflammatory processes in the body, can detect viral and bacterial diseases, helminthiasis and possible allergies. A biochemical - identify pathological process in a particular organ, to determine the functional capacity of the studied organs (kidney, liver, pancreas, etc.) and identify the carbohydrate, protein, lipid, mineral metabolism[2,3,4,5,6].

Aims and objectives. Compare reference values of blood in different literature sources. Explore hematological and biochemical blood parameters in clinically healthy dogs in Odessa. Make data analysis.

Material and methods. We examined 10 dog breed poodle aged 3-4 years. After history taking and clinical examination of animals, it was given the status - clinically healthy. Before animals had no diseases, the temperature at the time of examination ranged from 38-39, slimy - pink, lymph nodes, skin, musculoskeletal system - the norm. In a clinical study of cardiovascular, respiratory, genitourinary system and gastrointestinal tract - abnormalities were found. Sampling of blood and its research hematological and biochemical parameters were carried out by generally accepted methods.

Material for the study served as a reference value data international and native sources.

The results of research. For comparison, reference values of blood were selected following sources: 1) Guide pratique de medicine interne chien, chat et NAC, F.Hebert, C.Bulliot, 2010, France, Paris; 2) Clinical Veterinary Laboratory,

M.Medvedeva, 2009 Moscow, 3) Veterinary clinical biochemistry, MI Cartashov, 2010, Kharkiv.

Table 1.

Comparison of norms biochemical and hematological blood parameters in dogs.

Blood indices	F.Hebert, C.Bulliot, 2010	M.Medvedeva, 2009	M.Cartashov, 2010
Glucose, mmol / l	3.5-6.1	4.3-7.3	3.14-5.7
Creatinine, mmol / L	60-128	26-120	51-124
Urea, mmol / l	3.1-10.9	3.5-9.2	2.3-7.5
Luzh.fosfataza, U / L	18-94	18-75	20-150
Amylase, U / L	190-1350	685-1800	500-1750
Tot. protein, U / L	57-76	40-73	55-82
Albumin, U / L	28-39	22-39	41.04-57.58
Globulin U / L	26-44	25-42.5	28.4-69.94
Tot.bilirubin,mmol/L	0-4	3-13.5	1.31-8.58
AST, U / L	10-50	11-42	10-25
ALT, U / L	11-59	9-52	10-55
GGT, U / L	0-6	1-10	0-6
Cholesterol, mmol / l	2.74-9.5	2.9-6.5	3-6.6
Magnesium, mmol / l	0.7-1.1	0.8-1.4	0.7-1.1
Calcium mmol / l	2.35-2.93	2.3-3.3	2.2-2.5
Phosphorus, mg / l	0.9-2	1.1-3.0	0.7-2
Sodium, mmol / l	140-153	140-150	140-153
Erythrocytes, x10 * 1	5.6-8.5	5.2-8.4	5.5-8.5
Hemoglobin, g / l	132-193	120-180	145-220
Leukocytes,x10 * 9/l	6.1-17.4	8.5-10.5	5.5-14.5
Basophils,%	0-2	0-1	0-1
Eosinophils,%	0-2	2-9	3-9
Young,%	0	0	0
Mr. stab.%	0-5	1-6	1-6
Segmented,%	55-75	40-71	45-60
Monocytes,%	2-9	1-5	1-5
Lymphocytes,%	8-36	21-40	21-40

Analyzing the data of Table 1, we can see that the performance difference is quite significant. For example, a noticeable difference biochemical blood parameters, especially creatinine, alkaline phosphatase, total bilirubin, and other indicators are also different, but less pronounced. Among the hematological parameters, a large gap there in terms of - hemoglobin, eosinophils, monocytes and lymphocytes.

As already mentioned, the difference may be explained by the fact that the figures were derived by different methods, apparatuses, in different regions and even countries, using different reagents from different manufacturers, etc.

It should be remembered that the interpretation of blood - is a very important matter, incorrectly analyzed the data, you can put a misdiagnosis. Interpret complex analysis is required, including medical history, symptoms, and take into account all the changes obtained in terms of blood.

For further research, we chose reference values for M.Medvedevoyu, 2009.

Following steps of our research was to analyze the blood of clinically healthy dogs. Therefore, to study more objectively, we chose a group of 10 adult dogs aged 3-4 years, one breed - poodle, which were kept in the same conditions (food included in the diet of Royal Canin Mini Adalt for adult dogs of small breeds weighing 1 to 10 kg, aged 10 months to 8 years; as drinking water for dogs used tap water of Odessa).

From this table we see that the average clinical and hematological parameters of clinically healthy dogs, almost all members of the given rules of national literature M.Medvedeva, 2009. Some of them are cholesterol and calcium, are somewhat different from the norm. However, minor deviations can not be considered a pathology.

Table 2.

Clinical and hematological parameters of clinically healthy dogs.

Blood indices	N	M	m
Creatinine, mmol / L	26-120	54.46	+/-0.24
Urea, mmol / l	3.5-9.2	7.36	+/-0.06
Amylase, U / L	685-1800	1188.6	+/-14.03
Tot. protein, U / L	40-73	62.9	+/-0.25
Albumin, U / L	22-39	32.9	+/-0.11
Globulin U / L	25-42.5	30	+/-0.19
Tot.bilirubyn,mmol /L	3-13.5	8.41	+/-0.03
AST, U / L	11-42	30.68	+/-0.41
ALT, U / L	9-52	35.82	+/-0.81
GGT, U / L	1-10	5.7	+/-0.09
Cholesterol, mmol / l	2.9-6.5	6.69	+/-0.07
Magnesium, mmol / l	0.8-1.4	0.87	+/-0.01
Calcium mmol / l	2.3-3.3	2.26	+/-0.02
Phosphorus, mg / l	1.1-3.0	2.21	+/-0.03
Sodium, mmol / l	140-150	147.3	+/-0.24
Erythrocytes, x10 * 1	5.2-8.4	6.9	+/-0.03
Hemoglobin, g / l	120-180	147.3	+/-0.43
Leukocytes,x10 * 9 / l	8.5-10.5	9.68	+/-0.03
Basophils,%	0-1	0	+/-0
Eosinophils,%	2-9	2.4	+/-0.08
Young,%	0	0	+/-0
Mr. stab.%	1-6	2.2	+/-0.05
Segmented,%	40-71	62	+/-0.19
Monocytes,%	1-5	3.7	+/-0.04
Lymphocytes,%	21-40	29.6	+/-0.19

Conclusions.

1. Dogs are kept in good conditions, with a balanced diet, drinking water meets state standards.

2. Reference values (ratios of clinical and biochemical blood tests) in different sources are some deviations from each other.
3. Clinical and hematological parameters studied clinically healthy dogs in the vast majority - conform. A deviation can not be considered a pathology.

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Клініко-гематологічні показники клінічно здорових собак

Коритняк А.М.

Лабораторний аналіз не має сенсу, якщо не знати, які показники повинні бути у здорових тварин, але в кожному літературному джерелі діапазон клініко-гематологічних показників відрізняється. Цей діапазон в наукових джерелах називається - довідкові показники, або довідкові норми, інтервали, середні, «нормальні» значення. Вони дозволяють судити про те, чи є тестовий результат нормальним або аномальним.

Ключові слова: собаки, кров

Клинико-гематологические показатели клинически здоровых собак.

Коритняк А.М.

Лабораторный анализ не имеет смысла, если не знать, какие показатели должны быть у здоровых животных, но в каждом литературном источнике диапазон клинико-гематологических показателей отличается. Этот диапазон в научных источниках называется - справочные показатели, или справочные нормы, интервалы, средние, «нормальные» значения. Они позволяют судить о том, есть ли тестовый результат нормальным или аномальным.

Ключевые слова: собаки, кровь