


Statistical Analysis of Biochemical Liver Profil of <i>Ursus arctor</i> in Albania			Veterinary Medicine
		Keywords: mean, normal distribution, kurtosis, skewness, percentage.	
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Abstract			
<p>In this study, we have made the biochemical examination of liver, with biochemical analyzer Cobas for 18 bears (n = 18) of the race <i>Ursus arctor</i>. For all the results we have executed the statistical evaluation by using the computer program SSPS17 version. From the basic features we have evaluated the main characteristic: the mean, standard error of mean, standard deviation, variance, mode, skewness and kurtosis different percentiles. Also we have used box plot for graphical presentation of different percentiles and histogram of distribution of the data and plot of Normal distribution of these data. The statistic biochemical indicators of liver show a general value about meridians values for GPT, GOT, GGT, and TP. The deviations from meridian values were noted only for CK. The variations in indicators of CRP condition the physiological, age and breeding conditions. The variations in glucose values highlighted the diversity of conditions in captivity breeding bears.</p>			

1. Introduction

The Brown bear (*Ursus arctos*) actually is part of the disappearance animals list and in Albania is classified specie protected by law. Based on the state statistics, the number of the *Ursus arctos* that live at the Albanian territory is approximately 300 animals, (Alexandros A. Karamanlidis, 2009). Taking into consideration the non adequate management of wild fauna, the habitat change as a result of human intervention in forest, the reduction of food due to forest burning and the killing or captivity for commercial purposes and poverty in rural areas the number of the *Ursus arctos* is significantly reduced, (Servheen, C. 1990). Also in the reduced number have affected and the movement of the population in the previous prohibited areas, use of the heavy industry in these areas and the rabies disease in some northeastern areas of the country, (Laçi, D., *et al.* 2013). Another bad widespread phenomenon in the rural areas is and the bear captivity used for commercial purposes. Based on these changes in the rural areas, a considerable number of bears result to be in captivity and very bad feed it, (Nelson, R. A., *et al.* 1983).

2. Materials and methods

The blood samples were collected from the cephalic vein into evacuated heparin containers. Samples were kept cool and dark until they were transferred to the laboratory where plasma was prepared by centrifugation and frozen within 8 hr of sampling. The biochemical examination of

Where: P_i is the frequency of grade observed in i class while f_i is the e frequency in i class.

The theoretical value of $\chi^2(1)$ for the critical value

for the critical value $\alpha = 0.05$ is 3.841 and for $\alpha = 0.10$ is 2.706.

The calculate valeus χ^2 for biochemical indicators mentioned above, are presented in table 2. As shown in this table we have a deviation from the normal distribution security level with 95% for the indicator Mg_mg/dl while the 90% confidence level for indicators GPT, GOT and CK_UI.

	Chol mg/dl	Trig mg/dl	GOT Ul	CREA mg/dl	CRP mg/dl	GPT Ul	GGT Ul	GLU mg/dl	CK Ul	TPRO gl
χ^2	0.67	1.11	2	0.22	2.44	2	1.11	2	3.78	0.22

Tab. 2. The avoidance values of indicators in evaluation of the functioning of the liver.

	GOT_Ul	CRP_mg/dl	GPT_Ul	GGT_Ul	GLU_mg/dl	CK_Ul	TPRO_gl
GOT_Ul	1	0.211	.742**	.606**	-0.105	0.427	-0.075
CRP_mg/dl	0.211	1	0.253	-0.157	-0.121	.653**	0.318
GPT_Ul	.742**	0.253	1	0.421	0.174	.491*	-0.121
GGT_Ul	.606**	-0.157	0.421	1	0.13	0.04	0.264
GLU_mg/dl	-0.105	-0.121	0.174	0.13	1	-0.244	0.022
CK_Ul	0.427	.653**	.491*	0.04	-0.244	1	0.262
TPRO_gl	-0.075	0.318	-0.121	0.264	0.022	0.262	1

Tab. 3. Table of the correlations

* the significant correlation in the level of 0.05 with two lines

** the significant correlation in the level of 0.01 with two lines

The values presented in the table show all the specific values correlations among all indicators included in the study to assess the test liver function.

4. Conclusions

The statistical analysis of biochemical indices for 18 samples from *Ursus arctor*, held in captivity in Albania, generally showed a value about meridianes values. These values resulted such for: GPT, GOT, GGT, and TP.

The reason for meridiana deviations values of CK were stimulate from muscular injuries. Another variation that was produced was for Crp. The factors that have caused this variation, are: age, physiological condition and nutrition.

The variations in glucose highlight the diversities values of breeding conditions which is normal to be presented in the main power indicator.

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