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THE AGE DYNAMICS OF DIABETES MELLITUS IN DOMESTIC CATS

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Abstract. *The article provides an analysis of modern research data in the branch of veterinary endocrinology on the causes, spread and classification of diabetes mellitus in animals. The results of own researches on age dynamics of development of diabetes mellitus of domestic cats are presented.*

Keywords: insulin, metabolism, endocrinopathy, age factor, pathology.

Diabetes mellitus in humane medicine is one of the major problems. According to various researchers and specialists, this disease is attributed to the diseases that cause early disability and premature mortality in the population of almost all countries of the world [1].

According to the literature data, diabetes in domestic animals is quite often noted, but does not reach the prevalence inherent in mankind [2]. There is less research on diabetes mellitus than in human medicine. At the same time, the incidence statistics do not fully reflect the spread of this pathology, because not all cases are noted. Also, it is known that diabetes affects mostly animals with a single-chamber stomach [3], and it is more often recorded in pigs, horses, cats, dogs, etc.) [4]. In the world of veterinary

practice, the spread of diabetes among cats and dogs is due to the increase in the number of pet owners who often feed on human foods. The imbalance of physiologically active substances in the diet of animals provokes impaired digestive processes, metabolic disorders, the development of certain diseases, including diabetes [5-7].

Diabetes in animals is characterized by absolute or relative insufficiency of insulin, which causes severe disorders of carbohydrate, protein and lipid metabolism [8].

Therefore, ME Peterson and J. R. Randolph [9,10] proposed to classify diabetes in cats into three types.

Type 1 – insulin-dependent diabetes mellitus. Cats with this type of diabetes have a body weight deficiency because insulin is a lipogenic hormone and animals have tendency to ketoacidosis. They need lifelong insulin.

Type 2 – insulin-non-dependent diabetes mellitus. Cats with this type of disease, in contrast to patients with type 1, have normal or overweight. There is no development of ketoacidosis, even with the termination of insulin for a long period.

Type 3 – is secondary diabetes mellitus. It can develop in cats as a result of various factors: primary pancreatic disease (eg, pancreatitis), endocrinopathy (eg, hyperadrenocorticism or acromegaly), administration of some drugs that have the properties of insulin antagonists (eg, glucocorticosteroids). ME Peterson believes that the value of this attempt at this classification can help veterinary practitioners to navigate the choice of treatment between insulin and oral antipyretics [11].

According to Rand J.S. (et al, 2004) and Henson M.S. (et al, 2006) about 80–95% of diabetes mellitus in cats is of type 2 [12, 13], but it is usually diagnosed diabetes that has a more severe course [14].

Meanwhile, diabetes can develop in domestic cats of all ages, breeds and genders. However, the disease is most commonly seen in middle and old animals. It is more pronounced in male cats than in females. In addition, obesity or high body weight is also an important factor in the development of diabetes in cats [15].

The aim of the work was to analyze the age-related dynamics of diabetes in domestic cats.

We have found cats with type 1 and type 2 of diabetes mellitus during supervision of animals that were admitted to the veterinary clinic. Thus, we have noted 23 cats with diabetes. Type 1 was accompanied by cachexia, type 2 was overfeeding and obesity of animals. We have used 20 domestic cats with no obvious signs of disease as control.

Analyzing the age-related dynamics of diabetes mellitus (Fig. 1) in cats, we have defended that the largest number of animals with the specified pathology was in the age category over 10 years (type 1 - 54.5%, type 2 - 66.7%). The next group in terms of numbers was animals aged 7-9 years (1-type - 36.4%, 2-type - 25.0%).

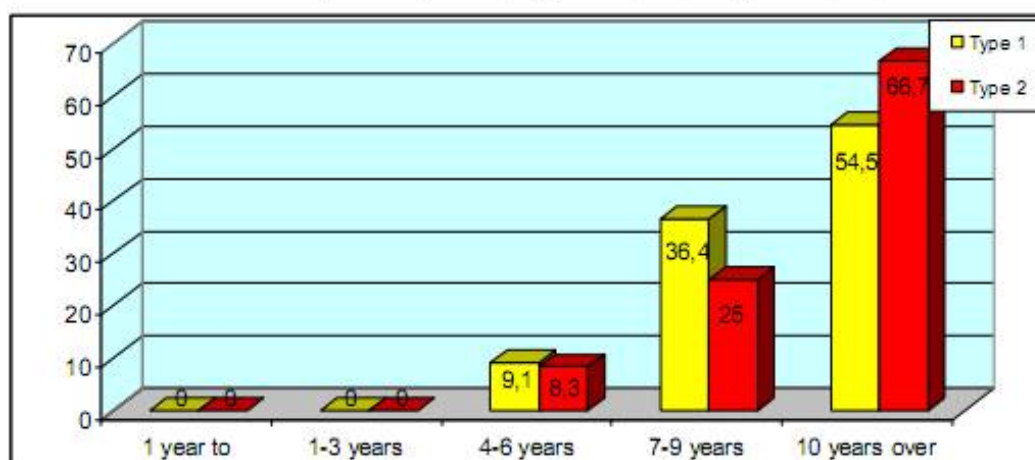


Fig. 1. Age-related dynamics of diabetes in domestic cats.

In addition, we have noted no cases of disease of animals up to 3 years during our supervision. The largest percentage of sick cat was in the more elderly population. The type 2 of diabetes mellitus in cats begins at the age of 4-6 years. Most likely, it is related with sterilized or castrated of animals at an early age. Obtained data show the considerable impact of age factor to the development of diabetes in companion animals.

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