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**THE BREED TENDENCY TO DIABETES MELLITUS FOR DOMESTIC
DOGS**

Lokes-Krupka Tereziia

Candidate of veterinary sciences,

Kanivets Nataliia

Shatokhin Pavlo

Shcherbakova Nataliia

candidates of veterinary sciences, associate professors

Burda Tetiana

master's degree of veterinary medicine,

Poltava state agrarian academy

Poltava, Ukraine

Abstract. The article summarizes the information on diabetes mellitus of different types in domestic dogs, the causes and the original data on the relative susceptibility of this species to type of diabetes mellitus.

Keywords: obesity, insulin, insulin resistance, metabolism, endocrinopathy.

Diabetes mellitus, according to WHO, is a global problem of modern medicine leading to premature death [1]. This disease affects many dogs and cats among small animals in veterinary practice. Therefore, the interest in the study of diabetes, both in humans and animals, does not fade and prompts scientists to seek new ways of diagnosis and treatment for these pathologies and its complications [2,3].

Thus, at the end of the XIX century (1889), J. Mering and O. Minkovsky first had caused an experimental diabetes mellitus, and noted that the removal of the pancreas in dogs develops glucosuria, polyuria, polydipsia, sharp weight loss and

weakness in a sufficient amount of water. The authors had noted that the cause of diabetes is the removal of the pancreas [2,4].

In modern conditions, the development of diabetes is facilitated by metabolic changes, including insulin resistance, protein and amino acid deficiency, obesity, essential fatty acid deficiency, B-hypovitaminosis, etc. [5-7].

The base of impaired metabolism of carbohydrates, fats, and proteins for diabetes is the lack of action of insulin in the target tissues as a result of inadequate secretion or reduced tissue response. Impairments of insulin secretion and defects in its action often coexist in the same patient, and it is sometimes unclear which disorder is the primary cause of hyperglycemia [8].

The classification of glycemic disorders was approved by WHO in 1999. According to the new classification of diabetes, there are only two major types of disease: I-th and II-th. The exclusion of the insulin-dependent or insulin-independent adjectives from the name is due to the fact that, until recently, practitioners considered the nature of treatment (the need for insulin therapy) rather than the pathogenesis of the diagnosis [1].

In domestic pets, diabetes mellitus is classified according to the criteria adopted in humane medicine. Although some pathogenetic mechanisms of pancreatic endocrinopathy in animals are different from humans, which allows to identify different forms of the disease and to differentiate them [9-10].

Diabetes mellitus is a multifactorial pathology. Its occurrence is usually associated with overfeeding and stress. Morbidity is increased due to an increase in factors such as obesity and hypokinesia, or physical inertia [11].

During investigation that involves anamnesis, a clinical study of obese dogs (against on diabetic mellitus) it was found that a significant number of animals consumed natural feed or had a mixed diet (natural and dry feed). It is known that the consumption of carnivorous animals, in particular dogs, feed, which are inherent in the human diet, leads to a violation of their absorption of biologically active

substances. Such changes lead to disorders of metabolic processes and as a consequence provoke the development of certain internal diseases, including diabetes [12,13].

During the study, we have examined 18 dogs, different breeds and sex that were diagnosed diabetes of different types. In patients with diabetes of type I, the exhaustion was recorded, at diabetes of type II overweight (obesity) was noted. Controls served 15 domestic dogs without visible signs of pathology.

During research of sick dogs, we have found the following tendency to develop diabetes in animals according to their breed (Table 1). During supervision of 9 domestic dogs with diabetes of type I, pathology was most commonly noted in animals of the poodle breed, which was 44.5%, slightly less, about 22.2%, in dogs of Labrador retriever and Cocker Spaniel breeds and a single case – the non-related - 11,1%.

Table 1

A breed predisposition to diabetes in domestic dogs

Breed	I type	%	II type	%
Pug	0	0	1	11,1
Labrador retriever	2	22,2	3	33,3
Non-related	1	11,1	1	11,1
Cocker Spaniel	2	22,2	1	11,1
Poodle	4	44,5	3	33,3
Total	9	100	9	100

In case of diabetes of type II among nine dogs was more commonly diagnosed at Labrador retriever and poodle 33.3%, respectively. It should be noted that among other breeds (pug, albacore and cocker spaniel), the incidence of diabetes was 11.1%.

Although these breeds are prone to obesity, however, pancreatic endocrinopathy are occurred only in isolated cases.

Thus, we have established a certain tendency to diabetes mellitus depending on its type. Type I diabetes is more commonly reported in dogs of the poodle breed, and the second in the Labrador retriever and poodle. Characteristic of the latter breeds is a simultaneous tendency to overfeeding and obesity. The highest incidence of diabetes, both types, was recorded in dogs of the poodle breed.

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