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REACTIVE CHANGES OF THE ORAL CAVITY BY THE ACTION OF EXTERNAL AGGRESSIVE FACTORS

Key words: diabetes, salivary gland, prevention.

Our country is the first in terms of mortality in Europe [1]. Annually 500 thousand Ukrainian die from atherosclerosis and diabetes. In our country there is an epidemic of diabetes 2 type. Type 2 diabetes develops when the body becomes resistant to insulin or when the pancreas stops producing enough insulin. Exactly why this happens is unknown, although genetics and environmental factors, such as excess weight and inactivity, seem to be contributing factors[1]. Insulin is a hormone that comes from the gland situated behind and below the stomach (pancreas). In type 2 diabetes, this process doesn't work well. Instead of moving into your cells, sugar builds up in your bloodstream. As blood sugar levels increase, the insulin-producing beta cells in the pancreas produce more insulin, but eventually these cells become impaired and can't make enough insulin to meet the body's demands. The first signs of the disease are thirst and sensation of the dryness in the oral cavity [2]. Dentist should be aware of this disease. After all, the dentist may be the first physicians, who found a sick man [3].

The aim of our study was to examine changes in salivary gland tissue during the experimental diabetes and its prevention by herbal remedy.

We chose to study white rats with an initial body weight 150-170g. We chose these animals because they correspond to the person's age 40-45 years. The rats were kept on a standard diet of the experimental clinic of Vinnitsa National Medical University. We performed manipulations with animals in accordance with the general ethical principles in experiments on animals (Kyiv, 2001).

All animals were divided into three groups: the first – intact animals; the second – rats with experimental diabetes and the third – rats with experimental herbal prevention of diabetes. During 15 days the rats from the second and third group were injected dexamethasone in a dose of 0,125 mg/kg body weight. Animals of the third group – received preventive herbal

Table 1

animals \ sign	Body weight initial (g)	Body weight at the end (g)
1 group (n=10)	232,5±68,00	232,75±25,10
2 group (n=10)	224,38±18,74	181,63±21,24
3 group (n=10)	213,58±12,47	201,66±21,72

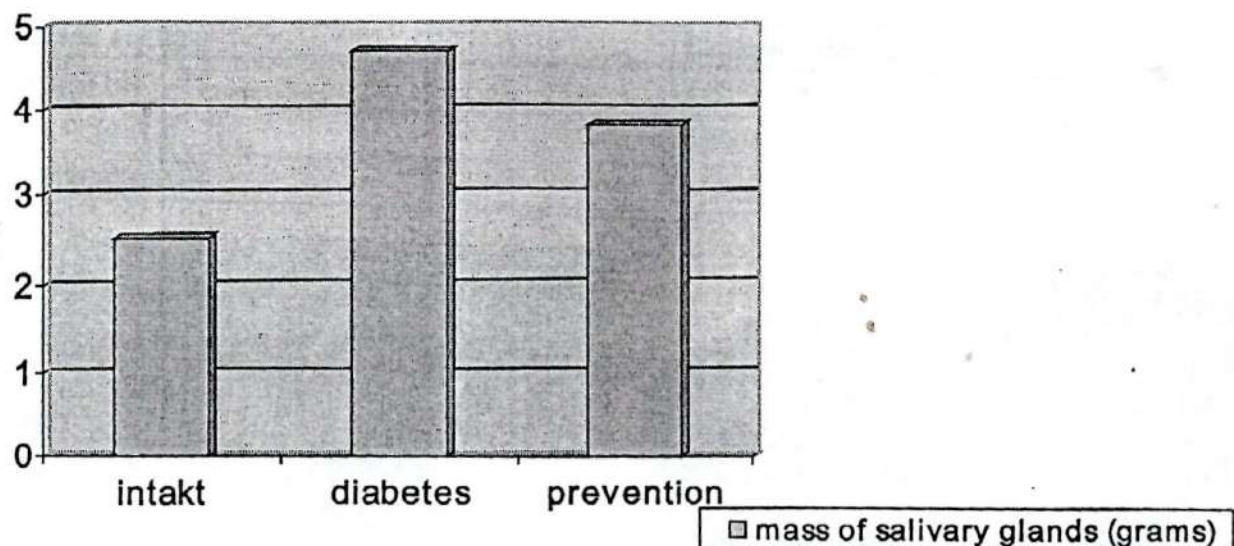


Fig.1. Mass of salivary glands

medicines. The animals were taken out of the experiment under ether anesthesia. The results were described. Experimental disease leads to a decrease in body weight of the rats (Table 1).

We observed an increase in mass salivary gland (Fig.1). The finding results show that the treatment has a positive effect on the recovery of the animal and body. This positive effect is due therapeutic action of herbal remedy. The composition of this herbal remedy includes traditional medicinal plants of Ukraine.

Blood glucose was measured by the analyzer "Eksan-G" (Lithuania). Studies have shown that in experimental diabetes blood glucose was higher by 30% in compare with animals of intact group, herbal medicine administration led to a decrease blood glucose by 10% compared with intact animals and by 30% compared with rats with experimental diabetes (Table 2).

Histological examination was conducted after certain manipulations under the traditional technique such procedures. Histology salivary gland tissue was normal for this species. Salivary gland tissue consisted of epithelium and ducts. We observed well-developed secretory epithelium and ducts. Sectional area of ducts was even. Epithelium was well-developed and damaged (Fig.1).

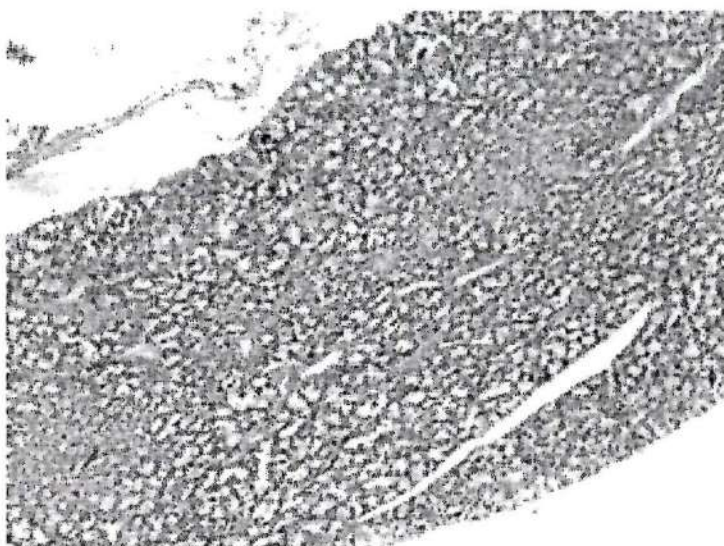


Fig.1 The normal histology gland tissue.

In the second group histological picture was the opposite. The excretory ducts were narrowed due to epithelial edema. Sectional area of ducts was reduced. Cells were swollen. They painted unevenly. The degenerative changes were in all areas of gland. The degenerative changes were in the acinus epithelium too. The excretory ducts were narrowed due to epithelial edema. Diabetes without treatment led to the fact that salivary glands did not remove saliva in the mouth. That is why sick people are always thirst.

Table 2

Groups of animals	Glucose (mMol/l)
Intact (n=10)	4,41±0,14
Diabetes (n=10)	5,67±0,67
Prevention (n=10)	3,95±0,65

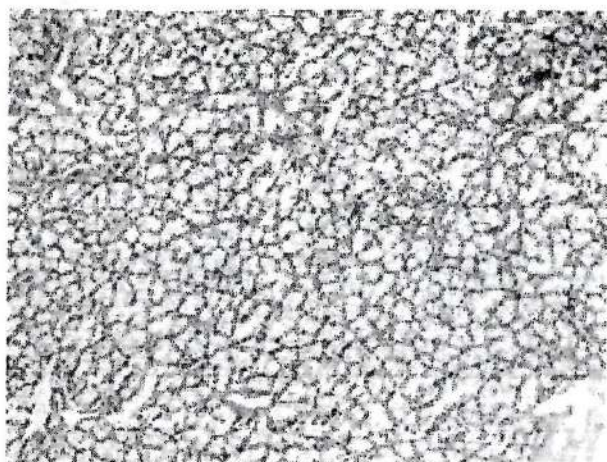


Fig. 2 The diabetic histology gland tissue.

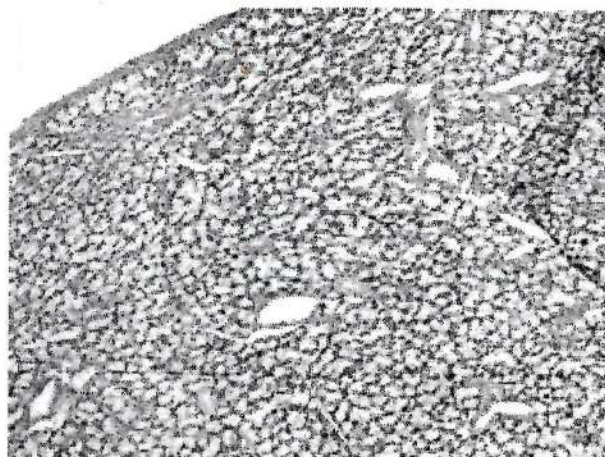


Fig. 3 The preventive diabetic histology gland tissue.

It was determined in the third animal group (preventive) that herbal remedy prevents the the degenerative changes of the salivary glands.

Thus, the external rat's loading of dexamethasone leads to diabetes II type and the degenerative changes of salivary glands. The preventive using of herbal remedies promotes to protection of salivary glands and may be recommended as the remedy for the treatment of diabetes II type.

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