



International Congress on Biological, Physical And Chemical Studies

International Congress on Biological, Physical And Chemical Studies - is an international conference platform under open access policy. The conference is led by international expert members who take an objective approach to peer review, ensuring each research paper is reviewed, edited by authors and evaluated on its own scholarly merits and research integration. Publishing and joining on the proceeding of the International Congress on Biological, Physical And Chemical Studies will ensure publishing experience and indexing possibilities on various global indexing.

STUDY OF THE EFFECT OF ENERGY DRINKS ON THE MORPHOMETRIC STATUS OF THE DUDEON WALL OF EXPERIMENTAL RATS.

T.J.Babajanov

Tashkent Medical Academy

A.S.Ilyasov

Navoi Innovation University

A.U.Avezov

Urganch Branch of Tashkent Medical Academy

G.Yu.Aytimova

Urganch Branch of Tashkent Medical Academy

ABSTRACT

Energy drinks (EI) are soft drinks that contain a large amount of caffeine and some psychoactive substances, including taurine amino acid, glucuronolactone and plant extracts - ginseng, guarana, vitamin B group. Energy drinks are products that stimulate and excite the human central nervous system, causing a feeling of freshness, increased work capacity and activity. Energy drinks have become a real lifesaver for young people preparing for exams, for corporate workers who can't turn in their work on time, for athletes, for achieving success, for fitness training, and for tired drivers, in short, for those who are tired but want to feel refreshed and full of energy.

KEYWORDS

Treatment, microscopically, duodeon, anatomical, energy drink

INTRODUCTION

Chronic consumption of energy drinks causes damage to the gastrointestinal tract in humans. In this regard, the production of treatment, preventive measures, and correction methods for diseases of internal organs remains one of the urgent problems of modern medicine, therefore, there is a need to conduct scientific research on the study of the effects of these drinks on the living organism all over the world.

Under experimental conditions, rats were decapitated 3 days after receiving 8.0 ml/kg of energy drinks per os for 3 months. Histopreparations were prepared by special standard methods by taking a sample from the duodenum and analyzing the obtained data.

chronically, it was found that the anatomical layers of the intestinal wall were preserved, and the goblet cells in the villi of the mucous membrane were filled with secretion and increased in size. It was found that changes in the 12th intestine are manifested by hypersecretion of goblet cells, increase in size, thickening of secretion. Foci of swelling and desquamation were detected in the mucocytes covering the surface of the mucous membrane. It was found that blood vessels

in the submucosa layer were full, interstitial swellings were formed, which showed that continuous stimulation under the influence of energy drinks for 3 months resulted in the formation of interstitial swellings in all anatomical layers of the intestinal wall and increased accumulation of lymphocytes compared to the control group. Caffeine+taurine+glucoronolactone contained in the energy drink has a direct and indirect negative effect on all the secretory cells of the intestinal mucosa, resulting in the increase of secretory processes and morphofunctional stress, hyperplasia and hypertrophy of cells. Cases of morphofunctional stress were also detected in goblet cells, Brunner's glands located under the mucous membrane of the intestine near the med pyloric branch. Villi are thickened, foci of lymphocytic infiltration are detected in their stroma, epithelial cells covering the surface of villi are vacuolated, microerosions and necrosis of goblet glands, interstitial swellings are detected in the villi stroma. Although the length of the villi of the mucous membrane did not change, they were thickened in width, lymphocytic-eosinophilic infiltration processes were observed in the areas of desquamated mucocytes, and these processes showed the development of surface active duodenitis processes in the damaged areas.

In conclusion, we can say that the Brunner's glands in the wall of the duodenum have undergone hyperplasia, the number of gland cells has increased, the spaces between the gland branches have widened sharply, vacuolar dystrophic changes have occurred in the gland cells, the size of the gland border has increased, the SO₂ concentration in the energy drink is high and it was found that Brunner's glands increase the compensatory function aimed at eliminating this process by increasing the acidic environment in food. Exactly, Brunner's glands can increase with the consumption of any strong carbonated drinks, but according to foreign literature, this effect is increased by 2.5-5 times under the influence of energy drinks, and these changes were confirmed in our research work.

REFERENCES

1. Rossowska, M. J., & Nakamoto, T. (1990). Effect of caffeine on zinc absorption and Zn concentration in rat tissue. *British Journal of Nutrition*, 64(2), 553-559.
2. Ayuob, N., & ElBeshbeishy, R. (2016). Impact of an energy drink on the structure of stomach and pancreas of albino rat: can omega-3 provide a protection?. *PloS one*, 11(2), e0149191.
3. Grigorenko, A. S., Yeroshenko, G. A., Shevchenko, K. V., & Lysachenko, O. D. (2021). Remodeling of the rat duodenal wall under the effect of complex food additives of monosodium glutamate, sodium nitrite and ponceau 4R.
4. Vrabcova, M., Mikuska, L., Vazan, R., Miko, M., Varga, I., & Mravec, B. (2016). Effect of chronic intake of liquid nutrition on stomach and duodenum morphology. *Acta Histochemica*, 118(4), 435-442.
5. Liu, T., Wang, C., Wu, X., Ren, M., Hu, Q., Jin, E., & Gu, Y. (2021). Effect of boron on microstructure, immune function, expression of tight junction protein, cell proliferation and apoptosis of duodenum in rats. *Biological Trace Element Research*, 199(1), 205-215.