Behavioral reactions were observed in a light/dark test. The latent time of the first entry into the dark compartment, the time spent in the light chamber, the number of transitions, the number of sightings from the dark compartment to the light, number of rearings, and total motor activity were recorded. Statistical processing of the results was performed using STATISTICA 6.1 using the Mann-Whitney U test. The difference was considered significant at $p<0.05$.

Results and discussion. Latency for the rat to enter into the dark compartment, compared to the control animals, in the caffeine groups was 2.2 times higher ($p = 0.014$), and in the «caffeine+peptide» groups by 1.4 ($p = 0.278$). Gidazepam increased the latency time by 7.6 times ($p = 0.028$) and the «gidazepam + peptide» group by 2 times (0.194). The same trend is observed with the parameter of time of stay of animals in the illuminated compartment. Caffeine increases the total time in the illuminated compartment by 2.4 times ($p = 0.02$), the «caffeine+peptide» group by 1.4 ($p = 0.328$), the gidazepam group 7.3 times ($p = 0.048$), the «gidazepam+peptide» group by 2.2 ($p = 0.234$). The number of sightings for groups of caffeine and «caffeine+peptide» is reduced by 20% in comparison with the control group, for gidazepam by 2 times, and «gidazepam+peptide» by 50%. The number of transitions does not differ significantly between groups. There was a significant increase in motor activity in the caffeine group, and a decrease in activity in the gidazepam group.

As a result of the experiment, we observed a significant increase in the latent time of entry into the dark compartment and the total time in the light chamber in the caffeine group, which is explained by the stimulating effect of caffeine, increased motor activity of animals, a higher number of rearings (2.3 times) were noted. Contrary to the caffeine group, the «caffeine+peptide» group did not show a significant increase in latent and total time. This may indicate a decrease in the excitatory effect of caffeine (10 mg/kg) by peptide. The latent and total time in the light compartment of gidazepam is significant more than the control group, and given the smaller number of sighting and significant inhibition of locomotor activity, we can assume significant anxiolytic properties of gidazepam, but with a pronounced sedative effect at a dose of 15 mg/kg. The group «gidazepam+peptide» showed a residence time of 3.3 times less in the illuminated compartment, and the number of sighting was 33% more than gidazepam. Locomotor activity in the group «gidazepam+peptide» did not differ from the control group. All this indicates the reduction of anxiolytic and sedative properties of gidazepam. According to the results of the experiment, the studied peptide in the light/dark test shows the ability to reduce the stimulating effect of caffeine and the inhibitory effect of gidazepam.

Conclusions. In the light/dark test, a solution of the modified NPY fragment at a dose of 0.1 mg/kg after intranasal administration showed the ability to reduce the effect of compounds capable of activating and inhibiting the CNS. The peptide under study restores the latent time of entry to the dark compartment and the total time in the light compartment to the level of control animals. This suggests that the test compound has regulatory, normotimic properties on the CNS.

EFFECT OF IODINE ON THE HUMAN BODY

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Introduction. Iodine is a trace element that is essential for the normal functioning of the human body. Depending on the age, the daily requirement for this element varies from 90 to 300 mcg. Iodine deficiency or excess can have serious consequences.

Aim. Our aim is to investigate the effect of Iodine on the human body.

Materials and methods. Review of scientific literature.

Results and discussion. From the chemical point of view, Iodine is a dark gray mineral that has a metallic luster and a strong odor, slightly soluble in water, but good soluble in alcohol and aqueous solutions of iodides. From the medical point of view, iodine is a trace element that the body needs to create thyroid hormones, such as thyroxine, for the purpose of metabolism regulation.

Thyroxine(T4) is a thyroid hormone, which refers to thyroid hormones chemical structure is iodized derivative. This hormone affects all tissues of the body, because it has no specific target cells. Thyroxine is able to penetrate through the membrane and join the receptors in every cell of the body. Thyroxine enhances oxidative processes in cells throughout the body, particularly in brain cells.

If the body doesn't receive enough iodine, the thyroid gland produces a little amount of thyroxin. This condition is called iodine deficiency.

Factors that may cause iodine deficiency:

• Low content of iodine in the diet.

• Deficiency of Selenium. Selenium is a microelement necessary for the absorption of Iodine in the body.

• Frequent use of products that destroy Iodine and block its action: peanuts, sweet potatoes, corn, soybeans.

• Compounds of Fluorine. (Scientists say that in areas where Fluorine is added to water supply system, iodine deficiency is more common.)

• Pregnancy.

• The radiation exposure.

• Sex. The risk of iodine deficiency is higher in women.

• Smoking.

• The use of alcohol.

• Age. At different ages may experience different types of iodine deficiency.

In the first place, due to lack of Iodine impairs processes of water-salt metabolism, metabolism of proteins, fats and carbohydrates, heat transfer in the body, the division and growth of cells.

Also iodine deficiency significantly affects the nervous system: emotional status and mental health deteriorate. The patient is dulled attention. They have an apathy, depression, weakness and the feeling of constant fatigue. Also gradually weakens the immune system. Cause of this person often suffers from viral diseases. Also patients have problems with heart and vessels: arrhythmia, increased blood pressure, decreased level of hemoglobin in the blood. In severe cases, the patient may experience thyroid cancer.

One of the consequences of lack of Iodine is a sharp increase of body weight that occurs due to the slowing down of metabolism.

Iodine deficiency is especially dangerous for pregnant women. If this element is not enough, pregnancy may be interrupted. Sometimes the baby may be born with cretinism or dead.

It is also very difficult for children to tolerate iodine deficiency. They lag behind in physical and mental development, slowed growth of body and the perception of information.

If iodine deficiency is chronic, thyroid tissue begins to grow, trying to compensate for the lack of thyroxine production by increasing the number of cells. This enlargement of the thyroid gland is called endemic goiter or Graves' (Basedow's) disease.

Excess iodine is also dangerous. As is known, the human body requires microscopic doses of this element. In higher than normal quantities, iodine turns into poison. For example, during the Chernobyl disaster, many people were poisoned what caused by excessive use of iodine tincture in an attempt to protect themselves from radiation.

The simplest prevention of iodine deficiency in the body is to use iodized salt to prepare daily meals. To increase the content of iodine in the body, the daily diet should include: seafood (mussels, squid, shrimp, caviar), white fish (pollock, hake, cod), sea kale, vegetables (potatoes, radishes, garlic, beets, tomatoes, eggplants, asparagus, green onions, sorrel, spinach), fruit (bananas, oranges, lemons, melons, pineapples, persimmons), eggs, milk, beef and walnuts.

Conclusions. Exploring scientific reference books, encyclopedias and sites with scientific literature, we described the effect of Iodine on the human body.

CONSERVATIVE CORRECTION OF THE OPEN ARTERIAL DUCT AT PREMATURELY BORN NEWBORNS

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Introduction. The Open Arterial Duct (OAD) is one of the most widespread defects among all congenital heart diseases (CHD) and its frequency is 10-18%. Now OAD meets more often, in connection with augmentation of survival of prematurely born newborns. A series of authors notices that the quicker there is a vessel constriction during the first hours after the birth, the spontaneous closing of OAD is more probable. Diameter of a duct is in feedback with gestational age at the birth, with the coverage varying from 20% among prematurely born with gestation terms more than 32 weeks up to 60% among the children who were born before the 28th week of a gestation. Clinical consequences of functioning of OAD depend on expression of the left-right shunting of a blood and ability of an organism of the newborn to compensate hemodynamic problems. Complications of dumping of a blood through an arterial duct are: the raised blood filling of lungs with development of pulmonary arterial hypertension; hypoperfusion of organs (kidneys, intestine, brain).

It is necessary to distinguish a pathophysiology of existence of an open arterial duct at prematurely born children whose mechanisms of closing of a duct remain unripe, and its pathophysiology at the children born in time at whom the open arterial duct really is congenital heart disease and it is perhaps bound to anomaly of an elastic tissue in a duct wall.

The most important physiological factor responsible for closing of a duct, the narrowing effect of a strain of oxygen in an arterial blood is considered. Such narrowing reaction amplifies in process of maturing of a fetus and arises at more low voltage of oxygen in process of approach of the extremity of pregnancy. However, in practice there are cases when at augmentation of partial pressure of oxygen in a blood of the child suffering from OAD Botallov a duct begins to decrease in the diameter. Generally it can be tracked when carrying out the giperoxygen test which is applied to differential diagnostics of a cardiogenic cyanosis and a cyanosis at others, is more often pulmonary, diseases. In the research Herrman spontaneous closing of an arterial duct at 86% of the newborns (middle gestational age – 28 weeks, weight – 998 g) who are written out from a hospital with OAD within 11 months is et al. described.

Thus, this scientific work is referred on the analysis of clinical data with the purpose of establishment of interrelation between the partial pressure of oxygen to bloods of the prematurely born newborn and diameter of an arterial duct.

Aim. To study influence of an oxygenotherapy on degree a fusion of an open arterial duct at prematurely born newborns.

Materials and methods. 50 case histories of the prematurely born newborns suffering from CHD (OAD), being on treatment in the Center of perinatology and children's heart surgery of Almaty are studied (during 2017). To all children clinical methods (determination of gestational age, anthropometry, hemodynamics assessment), laboratory researches (studying of gas structure to bloods – pO_2, pH), tool methods (An echocardiography, X-ray of organs of a thorax) are carried out. Control dynamic researches are conducted to 6 prematurely born children, received an oxygenotherapy.

Results and discussion. Among the prematurely born newborns suffering from OAD, boys 63% made, girls of-37%. Distribution of children on body weight are presented in the figure 1. The correlation between diameter of OAD and term of a gestation (r=0.047) is taped.