



Investigating the Effect of Hypoxia and Interception of Olfactory Nerve Receptor on Glucose, PT, T and TT of Non-Pregnant Rabbits Blood Plasma

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ABSTRACT: The subject of this study was to examine the effect of hypoxia and interception of olfactory nerve receptor on glucose, PT, T, and TT in rabbits. The study method is experimental that has conducted on two groups (test and control groups), these groups included non-pregnant rabbits during 2011-2013. The results show that hypoxia and interception of olfactory nerve receptor decrease glucose, PT, T, and TT in blood plasma and there are significant differences between control and test rabbits.

Keywords: Hypoxia, Glucose, Prothrombin, Thrombin, Olfactory Nerve.

INTRODUCTION

The main aim of the cardio-respiratory system is providing CO₂ and nutrients to the cells and removing of CO₂ and other metabolic products. The complete and appropriate conduction of this action owes to health of the respiratory and cardiovascular system and sufficient amount of red cells and blood hemoglobin and sufficient level of oxygen in respiration. Hence hypoxia converts the brain aerobic metabolism to anaerobic and as a result lactic acid is increased and lactic acid increased even has a direct relationship with brain damage level (King *et al.*, 1985). Also, hypoxia causes to disorder in conscious, ataxia, headache with dilation of cerebral arteries and dizziness, reduction of mental activity and coma and reduction of the muscles working capacity (Harrison (2008), Mekean and London (2001), Michiels (2004), Li *et al.* (2003) Kline *et al.* (2002)). Respiratory neurons in the brainstem receive information from chemical receptors, peripheral sensory and cortex. This information is integrated and obtained neural output is transferred to the chest wall and lungs. According to the information obtained in atelectasis of the lung that is called lung collapse influences the lung function not only by obstruction of the alveoli but also due to contraction of the lung and crush of capillaries and more contractions of arteries due to hypoxia in the alveolus, resistance on the blood flow in the pulmonary arteries is increased (Nordstrom and Arulkumara 1998). The recent research shows that olfactory cells are stronger than central neural cells (Sharp *et al.*, 1975). In derceptor olfactory, the olfactory cells transplantation tissues causes to rapid repair of the nerve. Nowadays, most of the researchers research on this subject depict that has it have the main role in human behavior and biology relative to what has been visualized or not. For example, the research has shown that the person can

recognize the difference between the vest that was wore by the infant that was wore by other infant by olfactory sense several days after birth (Nelson, 2006).

Some researches (Allison and Warwick, 1949, Kichi *et al.*, 1984, Bufler *et al.*, 1992) were conducted on the non pregnant female rabbits under hypoxia with derceptor olfactory and the results showed that hypoxia causes to reduction of glucose level, PT, T and TT in the experiment group and also, derceptor olfactory caused to changes in the above factors. It is surprising that in part of olfactory sense that has been developed in most animals and it is essential and also significant in humans and derceptor olfactory that does not aid in recognition of toxic, unhealthy and unpleasant annuitants and awareness of unpleasant conditions or environmental dangerous agents.

MATERIALS AND METHOD

Healthy pregnant New Zealand rabbits were divided into two groups. Three female rabbit which was breathing natural air was used as a control group and the other rabbits the last 10 days during 30 days of pregnancy exposed hypoxia with a compressed balloon with 7% O₂ and 93 % N₂ for a daily 20 minute period. 7% oxygen was observed with oximeter pulse. On the 31 day of their life, disabling olfactory nerves system (Epithelium) and benumbing with deep lidocaine using rheonoscope method were carried out. The blood samples were collected from ear part and then the value of glucose, PT, T and TT are determined in blood plasma, all samples were kept under supervision and care for four days to make decision by cultural committee. Then glucose from serum enzyme and PT were determined by German ORTO kit and T, TT were determined by French STAGO kit. All ethical issues were observed in this experiment.

A. Statistical analysis

Comparison of mean of control and treatment groups has conducted by T-test. T-Test results show that the glucose rate in treatment group is significantly less than control group ($m = 151$ for control and $m = 140$ for treatment group and $p < 0.01$) in the other words, the glucose rate has decreased in control group. PT rate in treatment group is significantly less than control group ($m = 16.3$ for control and $m = 10.8$ for treatment group $p < 0.01$) in the other words, PT rate has decreased in treatment group.

T rate in treatment group is significantly less than control group ($m = 21.3$ for control and $m = 17.0$ for treatment group $p < 0.05$), really T rate has decreased in treatment group. TT in treatment group is significantly more than control group ($m = 12.0$ for control and $m = 18.0$ for treatment group $p < 0.05$), really TT has increased in treatment group.

RESULTS

According to findings of this research it can be concluded that hypoxia and dereceptor olfactory causes to change in blood fibrin and it is seen in the non pregnant rabbit's plasma. So, the effect of hypoxia in blood is significant in long terms but dereceptor olfactory effect is less significant on blood in short term relative to hypoxia and this issue in our experiments. In our opinion, in the mothers experienced these effects in the blood level depict reaction in neural regulation that does haemostatic. The fermentative endocrine mechanism can be related to weak function. Finally, in damage and destruction of olfactory neural fibers in experiments by emphasis on the results of hypoxia and detectologiya provides importance of consideration from physiological and clinical perspective.

Table 1: Descriptive Statistics for Glucose, Protrombin (PT), Trombin (T), Trombin time (TT).

Traits	Research facilities	
	Control Group N=6	Experimental group N=6
Glucose	151±7,36	140 ± 5,4**
Protrombin	16,3±2,5	10,8 ± 1,7**
Trombin	21,3±3,6	17,0 ± 2,4*
Trombin time	12,0±1,7	18 ± 1,0*

*: Significant in the level of 0.5 **: Significant in the level of 0.1.

DISCUSSION

This research was conducted on the rabbits under hypoxia in time interval of (21-30 days) during 30 days. It is considered that experimental non-pregnant rabbits were under hypoxia in the last ten days compared with control group rabbits without receiving hypoxia with normal period in the 30th day. The results of the experiments after dereceptor olfactory nerve in both research groups show that glucose, PT, T and TT levels in the treatment rabbits are lower than control group. Indeed, according to the physiologic aspect and statistical analyses of the experimental research hypoxia and dereceptor olfactory nerve cause to the chronic and untreatable diseases. Aliv and Allahverdieva found that the experimental rabbits were under hypoxia in time period of 11-20 day during 30 days. The statistical findings depict that glucose, PT, T and TT levels are less than control group. Davidson *et al.* (1955). found that Anosmia shows complete elimination of dereceptor olfactory nerve also, hyposmia causes to reduction of smelling in the individuals suffering from smell impairment and they smell nothing but they could smell ammonium. It should be pointed that dereceptor olfactory nerve causes to changes in the glucose and coagulation factors. In the previous studies (Allen *et al.* 2004, Brunes *et al.*, 1992, Hemker *et al.*, 1990) conducted on the embryos growing under hypoxia before birth inside the womb and experience hypoxia

during growth stages and dereceptor olfactory nerve they showed biochemical changes of the blood system, changes in the glucose and coagulation factors. For the first time we find that non-pregnant mothers under hypoxia and dereceptor olfactory nerve show serious and obvious disorders in glucose, PT, T and TT level in the blood plasma compared with newborns.

In the present study, biochemical and statistical analyses showed that much blood plasma in our rabbits causes to clotting of the blood and decomposition of the fibrin compared to the newborns. It was shown that hypoxia and dereceptor olfactory nerve of the non-pregnant rabbits cause to significant changes in glucose, PT, T and TT levels. These findings are consistent to previous studies findings [Allen *et al.*, 2004, Brunes *et al.*, 1992, Hemker *et al.*, 1990, Vannucci 2000, Halasz and Shepherd 1983).

CONCLUSION

As a result of conducted researches, it is revealed that level of glycemic reactions, time of a prothrombin and thrombin in the blood plasma of non pregnant rabbits that were under hypoxia in given period time (21-30) during the 30th day of life is changed and in 31th day after dereceptor olfactory nerve is considered that the glucose, PT and T is decreased significantly compared with control group, but TT in plasma blood in rabbits that were under hypoxia is increased.

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