Effects of the laser radiation on the aspartate and alanineaminotranspherase activity in the different cortical zones of the brain of the rats.

A.A. Guliyev, T.M. Agayev, G.A. Gurbanova, Marar Fathi Abdel Shafi Osman.

Baku State University Garayev Physiology Institute of Azerbaijan Academy of the Sciences.

Baku, Sharif zade Str.2.

The investigation of the effects of the laser radiation on biochemical processes and changes in the cellular structures in the different cortical zones of the brain and hypothalamus caused by laser radiation is interesting scientific problem.

The aim of our study was to research changes in the limbic, orbital, sensomotoric, visual cortical zones and in the hypothalamus of the adult rats caused by laser radiation (wave length 515 nm, power 0.2 J). Device was constructed in the laboratory of semi-conductors of Baku State University.

The results of experiments showed that total aspartateaminotranspherase (Asp-ATase) activity was sharply increased in the sensomotoric cortex and hypothalamus, more alightly in the orbital limbic, and visual cortical zones, but alanineaminotranspherase (Al-ATase) activity was significantly decreased in the cortical tissues and hypothalamus after 24 hours after laser radiation it should be noted that total Asp-ATase and Al-ATase activity were significantly decreased in all investigated cortical zones and hypothalamus after 10 days. As-ATase activity was considerably decreased in the sensomotoric, visual cortical zone and hypothalamus - correspondingly in 2.0; 1.75 and 1.8 times, then in limbic and orbital zones - correspondingly in 1.3 and 1.2 times in comparison with the results after 24 hours after laser radiation.

Al-ATase activity after 10 days in the visual cortex and hypothalamus was decreased in 3.5 and 3.0 times (also in other structures in comparison with results after 24 hours after laser radiation.

The results after 30 days in comparison with results after 24 hours showed that total Asp-ATase activity in the investigated structures were decreased in 2.0 3.5 times.

Analogical congruency was observed in the specific Asp-ATase and Al-ATase activity more considerably, after 24 hours. 10 and 30 days after laser radiation in the investigated cortical zones and hypothalamus of the brain of adult rats.