

## FEATURES OF LIPID METABOLISM IN THE LIVER OF PIGS WITH DIFFERENT TYPES OF HIGHER NERVOUS ACTIVITY

A. O. Landsman, V. V. Karpovskiy, R. V. Postoy, V. I. Karpovskiy,  
V.O. Trokoz, D. I. Kryvoruchko

**Introduction.** Lipid synthesis is carried out in adipose tissue, which is the site of delaying lipid and in liver. According to the researchers the intensity of lipid metabolism in farm animals with different types of higher nervous activity are diverse. It was established that cows and sows with strong balanced mobile type have more intense processes of cholesterol and triacylglycerols synthesis is than weak type, as evidenced by their high content in blood and milk.

**Methods.** Experimental work was carried out on the JV "Idna," p. Ostrozhets, Mlyniv district, Rivne region at idle sows of large white breed under 3 years old and weighing 200-250 kg. Evaluation of conditioned reflex activity of determining the type of higher nervous activity was conducted using rapid methods. Blood samples were taken from the ear vein on an empty stomach, with subsequent reception of her serum.

**Results.** The study of the lipid metabolism in pig's liver set differing intensity of their occurrence in animals of different typological groups.

Studies have shown that the highest content of cholesterol in pigs SWBA type was  $2,75 \pm 0,07$  mmol/L and exceeded the results of animal SWBP type on 3,27 % (trend). At the same time noticed significant difference in this parameter between the SWBA and SU, W types – 7,64 % (at  $p < 0,05$ ) and 14,55 % (at  $p < 0,001$ ), respectively. Pigs of weak type had the lowest cholesterol content in blood serum –  $2,35 \pm 0,04$  mmol/L.

The highest level of triacylglycerols in the serum was typical for SWBA type pigs –  $0,41 \pm 0,02$  mmol/L and significantly exceeded the results in group of W type to 24,39 % at  $p < 0,01$ . The difference with the accepted SWBP and SU types was 4,89 % and 9,76 % respectively, and had the character of tendencies. The lowest content of triacylglycerols was found in pigs of W type.

The highest range of VLDL cholesterol was in the group of SWBA type and it was higher on 5,26 % and 10,53 % than the rates in groups of SWBP and SU pigs (tendency). Along with this significant difference between SWBA and W types was 26,32 % (at  $p < 0,01$ ).

The highest level of LDL cholesterol in pigs was marked as such in SWBA type –  $1,30 \pm 0,06$  mmol/L. The difference with the SWBP and SU was 4,62 % and 7,69 % respectively (trend). The smallest parameter was a W type pigs –  $1,03 \pm 0,06$  mmol/L and it was significantly lower at 20,77 % (at  $p < 0,05$ ) in relation to the results of SWBA animals.

The concentration of HDL cholesterol was lowest in serum of SU type pigs –  $1,17 \pm 0,01$  mmol/L and only on 0,85 % yield to the data obtained from species W type. The highest results were in group of SWBA type. We have seen a tendency to exceed the data on 0,79 % SWBP indexes in the group of pigs. At the same time the difference between the concentration of HDL cholesterol in serum when compared SWBA and SU, W animals was significantly at  $p < 0,01$  and was 7,14% and 6,35% respectively.

Correlation analysis found a close relationship between the major characteristics of cortical processes and functional activity of the liver in the metabolism of lipids.

**Conclusion.** As a result of our own research we found that the intensity of processes of lipid metabolism in the liver of pigs with different types of higher nervous activity is diverse. Most are characterized by high levels of pigs with strong well-balanced active type and the lowest – in weak type. Given the prevailing physiological role of the liver in the synthesis of cholesterol, triacylglycerols and lipoproteins of different density findings indicate a high level flow of synthetic reactions in the body of these animals, and the impact of typological characteristics of higher nervous activity is strong and significant.