

Clinical histology of liver of cattle newborn calves: applied aspect of study

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The aim of given research is to determine diagnostic significance of morphological monitoring at newborn calves with liver diseases. Liver plays a very important homeostatic function, besides it has considerable stock of reserve potential (cubic content), that causes objective difficulties in timely diagnostics, definition of nosologic belonging to its damages and formulation of prognosis. Liver diseases can take their course latently, asymptotically for a long time, causing great damage to organism overall. Especially it is actual for newborn animals. Imperfection of compensation and adaptation mechanisms in early age causes development of severe complications. Therefore, timely diagnostics of liver affections will allow raising the quality of veterinary measures greatly. Researches have been done in newborn calves of cattle with observation of rules of works conducting with the use of experimental animals. In this process we determined clinical status and carried out laboratory examination of blood with definition of some hematological and biochemical indexes. Laboratory tests included erythrocytes quantity, leukocytes quantity, haemoglobin quantity, rate of erythrocyte sedimentation and leukocytic formula; total protein, protein fractions, trial on colloidal stability of plasmatic proteins, immunoglobulin sum in blood serum, activity of transaminases. It has been determined, that liver affections of young stock are accompanied by unspecific deviations from clinical status, such as hypothermia, tachycardia and « polypnoe». Changes in circulating blood were characterized by traits of hypoplastic anaemia, hypo- and dysproteinemia with violation of colloidal stability of plasmatic proteins and low activity of indicatory enzymes (glutamic-alanine transaminase, glutamic-aspartic transaminase). The violations of functional condition of liver at newborn calves of cattle are characterized by absence of display of strongly pronounced specific pathological traits, and the use of means of laboratory diagnostics, as a rule, doesn't allow to determine nosologic belonging to disease, because states only violation of function but not structural violation. Based on data received we have done a device for puncture biopsy (patent RU 49705 U1), allowing to carry out early diagnostics of structural damages of liver at newborn calves of cattle. Received biopsy material has been processed with the help of methods of classical histotechnics, and it has been revealed that structural changes of liver have been followed by unformed liver structures, sharp reduction of quantity of binuclear hepatocytes, availability of fields of destructively changed cells with phenomena of caryolysis and macrophagous reaction. We can mention also: nucleus polymorphism, availability of hyperchromatic nuclei in hepatocytes, centers of micro- and macronecrosis. There were parts of hemopoietic active tissue in sinusoidal areas. Thus, morphological monitoring of liver plays a very important part in differential diagnostics and formulation of prognosis at diseases of hepatobiliary system of different genesis.

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