MORPHOLOGICAL FEATURES OF THE LIVER IN POLYPRAGMASIA

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Annotation: Studies of the morphofunctional state of the liver attract the attention of specialists in morphology and clinical biochemistry due to its essential role in metabolism, synthesis of proteins and lipoproteins in blood plasma, conjugation of bilirubin and formation of bile, detoxification, and other essential functions. In recent years, there has been a clear trend towards increased the number of drug lesions due to the growing expansion of the pharmaceutical market. Thus, in Japan, over 30 years, an 11-fold increase in drug hepatotoxicity was recorded. The cause of the development of acute drug liver damage (DILI) can be more than 1200 drugs, 200 of which are potentially hepatotoxic. According to pharmacoepidemiological studies, DILI most often develops against the background of non-steroidal anti-inflammatory drugs (NSAIDs), antimicrobial drugs, and drugs that affect the central nervous system (CNS), which is due not only to their potential hepatotoxicity but also to widespread use. 40% of all cases of acute hepatitis in patients aged 40 and over and 13–25% of cases of fulminant liver failure (FPI) are due to drug-induced hepatotoxicity. Medicinal hepatitis complicates the ongoing pharmacotherapy in 1–28% of cases, and 12–25% of cases contribute to the development of liver cirrhosis and liver failure.

Purpose of the study

The aim of ther research is to study the morphological features of changes in the liver parenchyma of white rats in postnatal ontogenesis with polypharmacy with anti-inflammatory drugs.

Materials And Methods

The study was carried out on 50 outbred mature rats of 3 months of age. Following the objectives of the study, all observed animals were divided into two comparable groups. An experimental simulation study with polypharmacy has been studied in laboratory rats. For this purpose, rats with the simultaneous use of up to 5 anti-inflammatory drugs in the liver tissue revealed the following morphological changes. The rats were divided into two groups: first control 15 cases were not exposed to NSAIDs (non-steroidal anti-inflammatory drugs); 2-nd study - 15 cases, within ten days, was prescribed NSPP. Then the animals were dissected; for morphology, one piece of tissue was taken from the liver, then fixed in 10% formalin, standard paraffin wiring was carried out and embedded in paraffin. 5-7 mm thick sections were prepared from the paraffin blocks. The preparations were stained with hematoxylin-eosin, picrofuchsin according to Van Gieson.

Results

We have studied liver tissue in rats after decapitation. Microscopic examination in the second group noted fatty degeneration of hepatocytes, foci of colliquation necrosis around the central veins with zonal necrosis - damage to the 3rd acini zone (centrilobular, perivenular), which was due to the high metabolic activity of this zone and increased production of toxic metabolites. In particular when taking paracetamol,

inflammatory infiltrate with a significant number of eosinophilic leukocytes, granulomas that did not have a specific structure, damaged to the bile ducts with the development of dystrophic changes in their epithelium, cholestasis in the periportal lobules, restructured the liver with the formation of false lobules of predominantly monolobular type, separated by fibrous septa.

Conclusion

The study results conclued that with polypharmacy in the liver tissue, fatty degeneration of hepatocytes, damage to the bile ducts with inflammatory infiltration, disturbances and signs of edema, dystrophic and necrobiotic changes were most pronounced with prolonged action of NSAIDs. The most common hepatotoxic drugs included paracetamol with dose-dependent hepatotoxicity of NSAIDs (non-steroidal anti-inflammatory drugs) with long-term use of these drugs. These structural changes in the liver of white rats in normal and polypharmacy states would allow establishing the most critical combinations of these drugs.

List Of The References

1. Baykova I. E., Nikitin I. G. Medicinal liver damage. RMJ (Russian Medical Journal), 2009, No. 1, p. 4-10.
2. Bueverov AO Medicinal lesions of the liver. RMZh, 2001, No. 9, p. 13-14.
3. Belousov Yu. B. Medicinal liver damage associated with macrolides. Is the connection obvious? RMZh, 2011, No. 18, p. 1118-1122.
4. Kovtun A. V., Yakovenko A. V., Ivanov A. N. et al. Drug-induced liver damage. Diagnostics and treatment. Attending physician, 2011, No. 2.
5. Ivashkin VT Diseases of the liver and biliary tract.— Moscow: Vesti, 2005.
6. Bound SV Clinical pharmacology of hepato-protectors. Pharm index Praktik, 2002, no. 3, p. 28-38.
7. Polunina TE, Mayev IV Medicinal lesions of the liver. Gastroenterology, 2011, No. 2, p. 54 (supplement to the consilium medicum).
8. Andrade R. J., Lucena M. I., Alonso A. et al. HLA class II genotype influences the type of liver injury in drug-induced idiosyncratic liver disease. Hepatology (Baltimore, Md), 2004, June, vol. 39, no. 6, pp. 1603-1612.
9. Andrade R., Lucena M., Fernandes M. C. et al. Drug-induced liver injures analysis of 461 residences submitted to the Spanish registry a 10-years period. Gastroenterology, 2005, vol. 129, pp. 512-521.
10. Aithal G. P., Watkins P. B., Andrade R. J. et al. Case definition and phenotype standardization in drug-induced liver injury. Clinical pharmacology and therapeutics, 2011, June, vol. 89, no. 6, pp. 806-815.
11. Lucena M. I., Garcia-Martin E., Andrade R. J. et al. Mitochondrial superoxide dismutase and glutathione peroxidase in idiosyncratic drug-induced liver injury. Hepatology (Baltimore, Md), 2010, July, vol. 52, no. 1, pp. 303-312.
12. Gupta NK, Lewis JH. Review article: The use of potentially hepatotoxic drugs in patients with liver disease. Aliment Pharmacol Ther., 2008, no. 28, pp. 1021-1041.