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DETERMINATION OF AROMATIC CARBOHYDRATES IN THE BILE OF CHILDREN

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Background: In sanitary unhealthy areas, hepatobiliary disorder occurs 3–4 times more than in relatively clean areas. This is probably stipulated by the impact of big quantity of industrial toxicants in the liver. It is established that environmental factors make from 14% to 36% of all the possible causes of hepatobiliary diseases.

Aim & Objectives: To evaluate the clinical significance of a method for determining the aromatic hydrocarbons in the bile in children.

Methods/Study Design: During the study, 303 children were examined with “biliary dyskinesia” (K82.8) and “sphincter of Oddi dysfunction” (83.4) according to CD-10. The study group embraced 204 children in the age group of 5–15 with hepatobiliary disorders, living in the area of refining complex impact. Ninety-nine children living in the sanitary healthy areas were chosen for the control group. We then performed chemical testing of biological media (blood and bile) in a group of children (N=45), using the developed chromatographic method, along with clinical and anamnesis, clinical laboratory and instrumental examinations.

Results/Findings: Thus, living in the area close to the source of hydrocarbons pollution impacts on the formation and evolution of hepatobiliary disorders in children. In those children who live in the area close to the source of hydrocarbons pollution, benzene, toluene, and xylene were detected in biological media (blood and bile). Exposure to aromatic hydrocarbons in children, the content of these compounds in the bile, may cause such patterns of biliary dysfunction as memory impairment and irritability in children, more pronounced symptoms of dyspepsia (food belching, vomiting after eating with bile, nausea and vomiting during while riding in the car and after a fatty meal, a tendency of thin stool, sclera subicteritiousness). Aromatic hydrocarbons contribute to the hypertonia of sphincter Oddi, intrahepatic cholestasis, gallbladder hypokinesia (benzene 0.007 ± 0.001 and 0.0001 ± 0.00001 and $p < 0.05$), which is accompanied by enlargement of the right lobe of the liver and bile flow, overtime.

Conclusion: The study results showed the adverse impact of the studied aromatic hydrocarbons on the condition of the hepatobiliary system, which induces the development of hypertonic-hypokinetic dyskinesia of the gallbladder and the development of intrahepatic cholestasis.

Biography

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