Expert symposium on severe acute hepatitis of unknown cause in children, a paradigm of exchanges and sharing between Chinese and Western medicine professionals

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Recently, cases of severe acute hepatitis of unknown cause (SAHUC) in children have suddenly increased in the United States, the United Kingdom, and other countries. In order to understand the progress in the diagnosis and treatment of this disease, and to prepare for the relevant plans in advance, the “Expert Symposium on the Severe Acute Hepatitis of Unknown Cause in Children” was successfully held on May 13, 2022, online organized by Beijing Children’s Hospital (BCH), Capital Medical University, Beijing Institute of Pediatrics Integrated Chinese and Western Medicine, Futang Research Center of Pediatric Development, and Branch of Hepatobiliary Diseases, China Association of Chinese Medicine. More than 9200 people watched the meeting online. Professors Yan Hu, Yan Yang, and Jing Hao, from the Department of Traditional Chinese Medicine (TCM), BCH, Capital Medical University, hosted the symposium.

The symposium started with a speech by Prof. Xin Ni, President of BCH, Capital Medical University, and Beijing Institute of Pediatrics Integrated Chinese and Western Medicine. Prof. Ni affirmed the importance of this symposium and suggested that although no similar cases have been reported in China, it is still important to pay attention to and be well prepared for detecting, caring for, and clinical monitoring. He hoped that we would uphold the advantageous role of the synergistic treatment of Chinese and Western medicine during the pandemic of the coronavirus disease 2019 (COVID-19) epidemic and promote the synergistic study and treatment of SAHUC in children with Chinese and Western medicine. Prof. Xiuhui Li, from Beijing Youan Hospital (a specialized hospital for infectious diseases), Capital Medical University, proposed to pay close attention to the development of the disease. She emphasized the importance of early detection and treatment to avoid deterioration of the illnesses, bring into full play of the characteristics of TCM, and working together with colleagues in Western medicine fields.

In the academic session of the Symposium, four experts made presentations. Prof. Jianshe Wang, Director of the Department of Infectious Diseases of the Children’s Hospital of Fudan University, gave a detailed overview of
the latest progress of SAHUC in children. He suggested strategies to deal with the disease, emphasizing the need to strengthen vigilance and improve the diagnosis and treatment whenever we find a case in China.

Prof. Xin Ni, President of Beijing Children’s Hospital

Prof. Xiuhui Li, Chair of the Branch of Hepatobiliary Diseases, China Association of Chinese Medicine

Prof. Zhengde Xie, Director of the Infection and Virology Research Department of BCH, Capital Medical University, gave a talk on “Pathogenesis of nonhepatotropic viral hepatitis in children.” He emphasized that a variety of non-hepatotropic viral infections can cause acute liver injury and even liver failure in children. He suggested multidisciplinary cooperation to study the etiology, important risk factors, and pathogenesis of SAHUC.

Prof. Shishu Zhu from the Fifth Medical Center of the People’s Liberation Army General Hospital gave a presentation on “Advances in the treatment of hepatitis C virus and hepatitis B virus in children,” focusing on new progresses in the treatment of chronic hepatitis C and hepatitis B. She suggested that screening for hepatitis C in children should be strengthened and also early treatment for hepatitis B virus infection.

Prof. Qiang He from the Department of TCM, BCH, Capital Medical University, introduced the ideas of TCM treatment for children with liver disease, starting from the understanding of jaundice in liver disease by ancient and modern physicians. TCM treatment is based on the identification of the disease, focusing on the “Four diagnoses” and references. He also emphasized the role of dampness and blood stasis in the disease process and focused on treating the liver and spleen together.

In the subsequent discussion session, both Western and TCM experts sorted out the research progress of this disease from different perspectives and emphasized the necessity of collaborative diagnosis and treatment of SAHUC in children.

**WESTERN MEDICINE SPECIALIST**

Prof. Hengmiao Gao, from the Pediatric Intensive Care Unit of BCH, has plenty of experience in the diagnosis and treatment of children with liver failure. After analyzing the etiology, pathogenesis, histopathology, clinical manifestations, and characteristics of critically ill cases, Prof. Gao concluded that more evidence is needed to support whether the SAHUC in children can be considered a new disease, and a multidisciplinary approach is required. He believed that hepatitis still needs to be treated in line with existing treatment protocols, including artificial liver therapy and plasma exchange if the medication does not work, early liver transplantation should be considered in critical cases of liver failure. He suggested that while promoting research, it is also necessary to popularize knowledge to alleviate social fears.

Prof. Gang Liu, Director of Infectious Diseases of BCH, pointed out that SAHUC may not be a new disease and similar diseases have been seen in the past since patients with liver impairment are common. However, the proportion of recent hepatitis patients with severe liver failure has increased and the proportion requiring liver transplantation is higher than before. She thought that the evidence for adenovirus as the causative agent of the disease is still insufficient, and attention needs to be paid to the possible impact of previous infections on the current episode.

Prof. Huawei Mao, from the Department of Immunology of BCH, stated the importance of immune dysfunction in children with SAHUC. He suggested that in addition to pathogens that can cause damage to the host, immune-related damage should also be considered. There have been reports of some children responding well to corticosteroids, and immune mediation may be involved in the development of the disease. Infections can cause a breakdown in immune tolerance and cause antigen exposure, which mediates autoimmune damage. He also pointed out that immune deficiencies caused by genetic defects may also lead to host intolerance to specific pathogens. In terms of treatment, he suggested that when there is evidence of immune dysfunction, therapeutic drugs such as corticosteroids and immunosuppressants can be added. The immunological data on SAHUC in children are lacking, and in-depth large-scale studies at the pathogenic and host levels are needed.

**TCM SPECIALIST**

Prof. Huimin Yan, from Department of TCM of BCH, shared her views from the perspective of TCM. Chinese medicine believes that the occurrence of liver disease is closely related to pathological factors (e.g., dampness and heat). From the reported clinical symptoms so far, it appears
that heat is less important in the early stages of the hepatitis in children, while cold, dampness, and toxicity play a major role. In the later stages of the disease, exo-pathogens may convert into heat in the interior setting. Prof. Yan pointed out that it is necessary to focus on the differentiation of syndromes during the treatment. In addition, children are a vulnerable group to hepatitis, we need to be aware more of prevention. Only when the body has sufficient vital qi can it resist external pathogenic factors.

Prof. Bingjiu Lu, Director of the Society of Infectious Diseases and Liver Diseases of Liaoning Province Medical Association, considered that the younger patients (less than 10 years of age) with SAHUC may have worse outcomes. The treatment needs to be based on their physical characteristics. With immature yin and yang, children are vulnerable to pathogenic factors and their disease progresses rapidly. Yang is frequently excessive while yin is often deficient in children, and their spleen is usually weak. Therefore, it is necessary to strengthen the spleen and cultivate the vital qi during treatment.

Prof. Jianmo Tang, from Xiamen Hospital of Beijing University of Chinese Medicine, presented his understanding of hepatitis from the perspective of endogenous and exogenous causes. In terms of external causes, Prof. Tang analyzed the characteristics of both pathogenic and geographical factors. He considered that the pathogenesis of the disease has been extensively studied but is not conclusive. Hepatitis is globally sporadic and locally aggregated, so geographical and environmental factors may also play important roles in the disease. In terms of internal causes, Prof. Tang also thought that host factors are inextricably linked to the disease. He suggested that the disease needs to be treated based on the differentiation of syndrome as TCM experts often do.

Prof. Yanping Shi, Director of the Department of Integrated Traditional Chinese and Western Medicine at Xi’an Children’s Hospital, demonstrated the efficacy of integrated traditional Chinese and Western medicine in treating severe hepatitis in children through two cases. She proposed that SAHUC in children is closely related to infective factors or drug injury. Children with serious cholestasis have a worse prognosis than children with elevated aminotransferase alone, which deserves more attention. She affirmed the efficacy and advantages of TCM in dispersing stagnated liver qi for promoting bile flow. She suggested that a full course of Chinese herbal interventions in the early stages of the disease in children may be beneficial.

Prof. Jianqiao Tang, from Wuhan Children’s Hospital, considered that hepatitis has little to do with ethnographic causes. Among children with hepatitis, the disease is more severe in the cases at a higher age. He suggested that it may be related to the stronger immune response in older children. However, the disease did not involve adults, which is contrary to the previous result. He considered that SAHUC may be related to infection, drugs, toxins, and other factors. The COVID-19 pandemic may play an important role in the hepatitis outbreak. Prof. Tang believed that yin jaundice is more difficult to treat than yang jaundice and has a worse prognosis. The treatment of yin jaundice should be approached from the perspective of toxicity and stasis, by activating blood circulation to dissipate blood stasis, clearing away heat and toxins, and normalizing the gallbladder to cure jaundice, and in children, more attention should be paid to the pathological factors of deficiency.

Finally, Prof. Li Li from Beijing Youan Hospital, Capital Medical University, summarized the meeting. She thanked the experts from pediatric liver disease, adult liver disease, pediatric TCM, critical care, infection, and immunity for their insights and elaborations on the SAHUC in children. The audience might have now had a better understanding about the disease. We expect that in the future, Chinese Medicine and Western Medicine doctors would collaborate more closely on the prevention, diagnosis, and treatment of the disease.

CONFLICT OF INTEREST

None.

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