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NIH launches free database of drugs associated with liver injury

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A free source of evidence-based information for health care professionals and for researchers studying liver injury associated with prescription and over-the-counter drugs, herbals, and dietary supplements is now available from the National Institutes of Health. Researchers and health care professionals can use the LiverTox database to identify basic and clinical research questions to be answered and to chart optimal ways to diagnose and control drug-induced liver injury.

Drug-induced liver injury is the leading cause of acute liver failure in the United States, accounting for at least half of cases. It occurs at all ages, in men and women, and in all races and ethnic groups. Drug-induced liver disease is more likely to occur among older adults because they tend to take more medications than younger people. Some drugs directly damage the liver, while others cause damage indirectly or by an allergic reaction. The most important element to managing drug-induced liver injury is to identify the drug that's causing the problem and appropriate steps to eliminate or reduce damage to the liver.

"Because drug-induced liver disease is not a single, common disease, it is very difficult to diagnose, with each drug causing a somewhat different pattern of liver damage," said Jay H. Hoofnagle, M.D., the major creator of LiverTox and director of the Liver Disease Research Branch at NIH's National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK). "Doctors have to rule out all other causes of liver disease before saying that a patient has drug-induced injury liver."

LiverTox has a searchable database of about 700 medications available in the United States by prescription or over the counter. Over the next few years, another 300 drugs will be added. The database offers these features:

An overview of drug-induced liver injury, including diagnostic criteria, the role of liver biopsy, descriptions of different clinical patterns and standard definitions.

A detailed report of each drug, including background, case study, product package insert, chemical makeup and structure, dose recommendations and references with links.

An interactive section, allowing users to report cases of drug-induced liver injury to the LiverTox website. Reports will be automatically forwarded to the Food and Drug Administration's (FDA) MedWatch program. MedWatch allows the public and health care professionals to report adverse events, product defects, or product use errors. The FDA uses the information to monitor product safety.

"LiverTox is the result of a significant scientific collaboration between the national and international clinical and research communities, the NIDDK and the National Library of Medicine (NLM)," said Steven Phillips, M.D., co-sponsor of LiverTox and director of NLM's Division of Specialized Information Services. "LiverTox demonstrates the importance of using informatics to provide easy access to evidenced-based information to clinicians and researchers that will improve the health and well-being of all and help prevent unnecessary morbidity and mortality, worldwide. I hope the dynamic LiverTox model can be used to create a new suite of databases that can identify drug-induced injury to other organs such as the heart, kidney, and lung. The National Library of Medicine is honored to be part of this significant scientific endeavor."

The developers of LiverTox worked with outside experts in drug-induced liver disease as well as specialists in arthritis, cancer, diabetes, infectious diseases, and other conditions. The content of each section of the database has been reviewed by an outside expert. The finished website has also been reviewed by FDA and pharmaceutical industry experts on liver-related complications.

"By integrating data that tends to be scattered across the published literature into a single, readily accessible place, we hope to bring greater focus and interest to the study of drug-induced liver injury, and to guide doctors involved with patient care and ultimately, reduce liver injury and improve the health of people," said Hoofnagle.

The database will be updated regularly with information about drug-induced liver injury as well as new drugs and new concepts. LiverTox welcomes input and comments from users through the website, at www.livertox.nih.gov .

Provided by National Institute of Diabetes and Digestive and Kidney Diseases