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****Teratogen Information System

DALLAS -- She was thrilled to hear she was pregnant; however, she was concerned that the medication she had been taking for an infection might cause birth defects.

Office of Medical Information

Her physician called The University of Texas Health Science Center to find out if the drug she was using is teratogenic, or capable of causing birth defects. The answer was probably not.

Over 500 agents -- from artificial sweeteners to chemotherapy -- are included in a new computer system being developed at UTHSCD to provide current information for doctors on the effects of drugs and other environmental agents on the embryo and fetus. The data system, called the Teratogen Information System (TIS), is directed by Dr. Bert Little, research assistant professor of obstetrics and gynecology, under a grant from the U.S. Public Health Service, Division of Maternal and Child Health.

A teratogen is an agent that can produce a permanent abnormality of structure or function in an organism exposed during embryonic or fetal life.

"Women often become pregnant while taking medication, or while working in a chemical or physical environment that is potentially harmful to the developing embryo or fetus," Little says.

Every child has about a 5 percent risk of being born with a congenital anomaly, or abnormality, Little explains. Fewer than 1 percent of all birth defects, however, are due to maternal drug and chemical exposure, while approximately 7 percent may be caused by infections and other diseases the mother has that may be teratogenic, according to Little. Birth defects due to teratogens are uniquely important because they are potentially preventable.

The TIS staff compiles information on potentially harmful effects of drugs and other agents to which pregnant women may be exposed. This information comes from a variety of sources, including the National Library of Medicine's TOXLINE Information System and the Environmental Teratology Information Center at the Oak Ridge National Laboratories.

The UTHSCD team began gathering information for this computerized knowledge base in October 1984. TIS is currently scheduled to be released to clinical teratology centers in North America in January 1987.

The TIS computer program currently contains over 500 agent summaries. The 200 most-prescribed drugs were researched first, but Little explains the system eventually will include more than 5,300 pharmaceutical agents and other chemical and physical agents. Each agent summary has a risk rating for congenital anomalies, as well as a rating for the quality of data on which the risk is based. Both ratings are based on a consensus by the TIS Advisory Board, which is composed of international authori-ties in human teratology. The board also makes editorial and policy recommendations.

Most U.S. and foreign generic and proprietary names for drugs, chemicals and physical agents can be used to locate agent summaries. A facility is also available to help identify, or narrow to a few possiblities, an agent for which the use is known but the name is not. Searches are updated and agent summaries are revised every 18 months.

"Before TIS, doctors had no way to obtain thorough, current and readily available information about potential teratogens," says Little. "Clinicians had to wade through large amounts of material in order to find out about teratogenicity of drugs."

The purpose of TIS, he says, is to determine from the available information if there are any known risks, then to provide that information for use as part of a comprehensive pregnancy risk evaluation.

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TIS is an autonomous entity at UTHSCD, affiliated with other major teratology centers in North America through the advisory board. Those centers are Thomas Jefferson Medical College in Philadelphia, The University of Iowa Medical School, The University of Washington in Seattle, Birth Defects and Genetics Diseases Branch of the Centers for Disease Control in Atlanta, and The University of British Columbia in Vancouver. Other teratology centers in the United States will use TIS by purchasing a subscription to the online computer services. Other centers will access TIS via computer and modem from the convenience of their offices.

According to Little, TIS has been developed specifically for use by physicians in teratology centers. The cost of the service is still undetermined, but it is a non-profit venture.

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NOTE: The University of Texas Health Science Center at Dallas comprises Southwestern Medical School, Southwestern Graduate School of Biomedical Sciences and the School of Allied Health Sciences.