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News

The University of Texas Health Science Center at Dallas
5323 Harry Hines Boulevard Dallas, Texas 75235 (214) 688-3404

CONTACT: Ann Harrell
Office: 214/688-3404
Home: 214/369-2695

*****The "good life" becomes a "short life" for many because of liver diseases.

The "good life" enjoyed by so many people in the United States and Canada may increasingly become a "short life."

The combined results of drugs, environmental pollutants, alcohol and disease have seemed to center on one hard-working but beleaguered organ--the liver. In less than ten years liver diseases in the United States are predicted to rise from fifth to third place as a cause of death.

And since death from liver diseases is often preceded by prolonged illness requiring frequent hospitalization, it is a serious problem for society, says Dr. Burton Combes, a prominent liver researcher and professor at The University of Texas Health Science Center at Dallas.

"Our high standard of living is very hard on our livers," he says.

Dr. Combes notes that much has been written about the problems of heart disease and cancer, but relatively little about the important organ which operates as a sophisticated chemical regulator, manufacturer and metabolic sewage treatment plant.

As a result, Dr. Combes and other liver experts have organized the American Liver Foundation. The organization, which has Dr. Combes as first chairman, is dedicated to developing support for research in liver disease.

The foundation was granted "seed money" from the American Association for the Study of Liver Diseases last year. This group's Development Committee became the founding board. The board is now seeking lay members and looking for a full-time executive director. In North Texas a small group is beginning an area chapter, one of 10 in metropolitan areas across the country.

Although most people don't realize it, the liver has functions absolutely vital to the maintenance of life, said the researcher. Yet it remains somewhat mysterious. All its processes are chemical, and extremely difficult to observe.

The liver acts as a major metabolizer, or chemical changer, in the body. Almost everything eaten, after being absorbed by the intestinal tract, goes first into the liver through the blood stream.

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Normally the liver purifies and detoxifies the blood before it goes to the heart and other organs. In fact, the liver is the main neutralizing center for certain dangerous chemicals, and the only neutralizer for alcohol, making alcohol even more dangerous because it speeds up the liver's metabolism.

Most substances in the blood not prepared for excretion are rendered safe and/or useful by this organ. When the liver is working normally, however, some of these substances may be converted into toxic, possibly carcinogenic, or cancer-causing, substances.

Another function of the liver is the manufacture of bile acids, which are aids to proper digestion and regulate the production of cholesterol. In addition, the liver stores certain foodstuffs and releases needed elements to the body in times of fasting. It produces necessary proteins that travel to different parts of the body, manufactures most of the blood-clotting factors, stores vitamins and iron, letting them go at the proper time, and helps maintain fluid balance.

"The liver is still something of a puzzle, though," says Dr. Combes. "No one knows why, but the liver is responsible for the integrity of muscle-tissue, as well as the 'aliveness' of the brain.

"If you took out your liver, in a number of hours your blood sugar would go so low you would become comatose and die. Even if blood sugar was maintained by intravenous infusion, coma and death would still develop but it would be delayed somewhat."

Why are liver diseases on the upswing in these modern, industrialized countries?

"No one knows for sure," answered the researcher. "That's because, even with the funds spent on liver by the National Institutes of Health, not enough research has been going on to investigate the multiple causes of increasing liver diseases in our society.

"But," he continued, "we can be pretty sure that the increasing amount of industrial pollution, chemical hazards in an expanding industrial economy and the development of new drugs have been heavy contributors."

In addition, the levels of affluence attained in our societies have led to increased abuse of numerous drugs. These abuses include both prescription and street drugs, as well as alcohol, well known as a cause of cirrhosis of the liver.

Much more needs to be known about metabolism in the liver and how it is changed by what we breathe, eat and drink. Some of the environmental pollutants may directly cause malignancy, while others accelerate or enhance the effects of the natural causes.

For instance, workers in the plastics industry, particularly those concerned with changing of gaseous vinyl chloride to vinyl, have developed blood vessel tumors in their livers. And no one has even begun to look at the implications of the 20,000 tons of vinyl chloride escaping into the atmosphere each year.

Many chemicals, harmless in themselves but which stimulate metabolism in the liver, are being added to our food--in the fields, during processing or at the packaging stage.

Statistics compiled by several groups devoted to the problems of liver disease in children show that they are emerging as a leading cause of death in the industrial states. Nearly 21 percent of these young deaths in California are attributed to liver problems while Massachusetts shows 17.1; Michigan, 17.2; New Jersey, 16.5; and New York, 21.5.

Some kinds of liver ailments are more frequent in women, possibly because of hormonal factors, he said. It is thought that "the pill," as well as a woman's own hormonal levels may be involved.

Diseases of the liver which are proving deadly include:

*HEPATITIS. Although commonly associated with young people, anyone can contract this disease. The liver becomes infected, often tender and enlarged, and the patient usually suffers from symptoms including fever, nausea, vomiting, jaundice and aversion to food. The virus may be present in the bloodstream, in the intestines and in saliva and other body contents. Thus, such a simple act as kissing can transmit the disease. Transfusions of blood or plasma from infected donors is a major problem. The disease may even be passed from mother to fetus.

*CIRRHOSIS. Cirrhosis is most often thought of in terms of alcoholics. However, half of the persons with cirrhosis do not have an alcohol-related disease. It has been established that many cases of cirrhosis, which literally means "scarring" are associated with hepatitis. Many others are of no known cause. Nor is there a known cure for most types of cirrhosis.

*CANCER. Although most people don't associate cancer with the liver, approximately 10,000 Americans die from it each year. But not a lot is known about this particular disease. Studies suggest one type of viral hepatitis is linked to the development of liver cancer. It is already known that tumors are most likely to develop in livers already damaged by cirrhosis. Drugs and chemicals are heavily implicated in liver tumors. Additionally, liver cancer is known to be caused by certain fungi, worms and parasites.

*GALLSTONES. Gallstones are made up of the constituents of bile, which is manufactured in the liver. The stones are usually made from the cholesterol in the bile which has come out of solution and hardened to form stones. These gallstones cause problems when they get stuck in the walls of the gallbladder, which then tries to push them out by muscular contractions. The attacks are often extremely painful. It is suspected that dietary, hormonal and genetic factors may all be contributory.

In the case of any disease, prevention and proper therapy require basic knowledge of how it is caused, how it spreads and what persons are likely to be susceptible. These important elements are largely lacking when dealing with liver diseases. The inadequacy of present medical knowledge is also reflected in the unavailability of specific therapy for most of these conditions. Medical science has been more successful in treating their complications such as gastrointestinal bleeding, fluid accumulation, coma and kidney failure, rather than the disease itself, said Dr. Combes. In order to turn this situation around, more research is needed.

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