THE LIVER AND HEPATITIS

Hepatitis is an inflammation of the liver. The two major types of hepatitis in North America are alcoholic hepatitis (a type of toxic hepatitis) and infectious (viral) hepatitis, usually caused by virus types A, B, or C.

TOXIC HEPATITIS

Toxic hepatitis is a non-infectious condition caused by exposure to chemicals that damage the liver. The list of harmful agents is quite extensive, but simple alcohol abuse accounts for the vast majority of cases. Alcoholism tends to be a chronic disease, and this prolonged inflammation often leads to cirrhosis (scarring) of the liver.

INFECTIOUS HEPATITIS

Infectious hepatitis is the most common of all serious infectious diseases in North America. It is estimated that perhaps a half million Americans per year contract the disease. Given the growing prevalence of a relatively new hepatitis virus – type C – this number will likely increase. An accurate count is difficult because most cases of acuter hepatitis go undiagnosed or unreported – the illness often feels no more serious than the flue. Other viruses and pathogens can cause hepatitis, but less frequently than hepatitis virus types A, B and C.

The course of the disease is variable. It can range from being totally asymptomatic to causing death in a small percentage of cases. Most people with infectious hepatitis suffer a few weeks of a flue-like illness, consisting of fatigue, aches and pains, mild fever, loss of appetite, abdominal pain, nausea and vomiting. More serious cases exhibit jaundice, dark colored urine, light colored stools, itching, and altered mental states, lapsing occasionally into coma. Most patients experience full recovery, but some progress to chronic hepatitis and possibly cirrhosis.

The extent of liver inflammation determines how poorly the liver works. In hepatic dysfunction it cannot normally filter and eliminate toxins, help digestion, regulate the chemical composition of the blood, process and store nutrients, and other vital functions. The extent of dysfunction can be measured by liver function tests (LFT's), a measure of certain liver enzymes in the blood. LFT's are a sensitive indicator of liver well-being.

Treatment for acute hepatitis usually follows a conservative regimen – lots of rest, good nutrition and plenty of fluids. Special care must be taken to avoid spreading the disease.

CHRONIC HEPATITIS

Some cases of toxic or infectious hepatitis turn into chronic hepatitis, which poses a greater problem. Chronic cases are prescribed steroids or interferon. In both cases, benefits need to be weighed against side effects. In toxic hepatitis, the patient must be removed from the offending toxin. This may be challenging when the cause is alcohol.

PREVENTION

The best way to deal with all forms of hepatitis is prevention – proper sanitation and hygiene, screening of blood products, vaccination, avoidance of toxins such as alcohol and intravenous drugs, and avoiding contact with the bodily fluids of infected people.

GSH IN THE LIVER

Hepatologists know that GSH plays a critical role in the liver – it is that organ's most important abundant antioxidant enzyme. We have already said that GSH concentrations are higher in the liver than in any other organ. This is because it functions as a substance for key detoxification processes in the liver.

Phase I liver detoxification transforms toxins into water-soluble forms. GSH is essential in Phase II, which neutralizes or conjugates these products and helps the body eliminate them through the gut or the kidneys. If these two detoxification phases are impaired for any reason, toxins will accumulate in the body and lead to disease.

Medical science has long known that a GSH deficiency invariably accompanies liver damage. When hepatitis results from acute overdoses of hepatotoxic pharmaceutical drugs such as acetaminophen (Tylenol, Atasol, etc.), the GSH-enhancing drug NAC (N-acetylcysteine) is used to raise GSH levels rapidly. This eliminates the toxic breakdown products of the overdose. The GSH deficiency is critical because it further compounds the illness and can easily lead it on a downward spiral.

Decreased liver production of GSH is seen in alcoholic cirrhosis, sicknesses caused by exposure to hydrocarbons and other toxins, viral hepatitis, fatty livers and even aging individuals. Ongoing research aims to raise GSH levels in an attempt to support liver function in these patients. This approach is even being tried in the treatment of fulminant hepatic failure.

Alcoholic patients with lower GSH levels are more prone to liver damage. This has prompted researchers to try to treat alcoholic liver disease by raising GSH levels. Clinical symptoms and liver function tests have been shown to improve with this method.

GSH IN THE TREATMENT OF VIRAL HEPATITIS

N.S. Weiss and his team at the Max Planck Institute demonstrated the antiviral properties of NAC in human tissue cultures. C. Watanabe found that Immunocal, a natural GSH precursor, to be effective in improving liver function abnormalities and immunological parameters in hepatitis B patients. These improvements continued even after the treatment ended, reflecting the long-term benefits of such an approach.

Treatment options for chronic hepatitis C sufferers are far from ideal. G. Barbaro and his team in Italy eloquently described the systemic depletion of GSH in hepatitis C patients, suggesting that this deficiency could explain their resistance to interferon therapy. O. Beloqui's team confirms this in a controlled study of hepatitis C positive individuals. By successfully raising one group's GSH levels with NAC therapy, they showed that interferon therapy was enhanced.

CASE STUDY

When he was young, Roger required multiple blood transfusions for the bleeding disorder hemophilia. As a young adult his liver was tested for abnormal function and the results revealed that he had acquired hepatitis C, probably from contaminated blood. Worried about the side-effects of antiviral medications and their limited success rates, he preferred to undergo unconventional treatment. His protocol included milk thistle (silymarin), tumeric (curcuma), alpha lipoic acid, methionine, N-acetylcysteine, and intravenous glutathione as well as a low-meat diet and avoidance of alcohol, acetaminophen and cigarettes. His liver function tests have since normalized.

CONCLUSION

The liver is the largest and most complicated organ in your body. It is intimately linked to a myriad of factors effecting health and illness. GSH is a key constituent of proper liver function. Low GSH levels invite a host of toxicological and immunological diseases. High levels offer protection against these maladies.

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