

Elevated liver enzymes associated with higher future mortality

March 3 2008

A new population-based epidemiological study has found that elevated liver enzymes discovered during routine medical care are associated with higher future mortality. The findings are in the March issue of *Hepatology*, a journal published by John Wiley & Sons on behalf of the American Association for the Study of Liver Diseases (AASLD).

Liver enzymes include aspartate aminotransferase (AST) and alanine aminotransferase (ALT), and high concentrations in the blood tend to indicate liver disease. About 10 percent of Americans have an elevated liver enzyme with no evidence of a cause such as hepatitis C or excessive alcohol consumption. Presumably, many cases are due to non-alcoholic fatty liver disease.

Studies in other countries have shown that elevated liver enzymes are associated with future mortality, however the link has never been examined in a U.S. population, so researchers led by Tae Hoon Lee of the Mayo Clinic in Rochester, Minnesota set out to address this question. They used data from Olmsted County, MN, where most of the population has had medical care at Mayo Clinic facilities, and included all adult patients who had their AST or ALT levels measured during routine visits in 1995. Those with levels above the upper limit of normal were followed forward until April 2006 to determine their survival.

AST was measured in 18,401 residents, and 2,350 (13 percent) had results above the upper limit of normal. Of 6,823 people who had their ALT measured, 911 (13 percent) had results higher than the upper limit

of normal.

After excluding those who moved away from the community, or died within two years (to rule out terminal illness as the cause of the abnormal liver enzyme levels), the researchers used the Kaplan-Meier method to estimate survival. They compared their results to mortality data for Minnesota Whites and found that elevated AST was associated with a significantly increased standardized mortality rate (SMR). Elevated ALT was also associated with a higher SMR. The SMRs ranged between 1.21 and 1.78.

“We demonstrate that serum AST and ALT activities are associated with increased risk of mortality in the ensuing decade,” the authors report. “The relation between the aminotransferase results at the outset and the subsequent risk of death (excluding the first two years) was almost linear. It is clearly shown that these simple, inexpensive blood tests may represent valuable indicators of long-term outcome.”

While the precise reasons for the association are unclear, some in the population undoubtedly had elevated enzymes as a result of serious liver disease. In addition, the authors suggest that elevated serum AST and ALT may be markers of cardiovascular diseases (nearly 34 percent of the deaths in the study population were due to cardiovascular causes). Other conditions such as chronic alcohol consumption or abuse may have contributed to the risk of death as well.

The study had limitations. First, the population was not a random sample and they were community residents who had reasons for receiving medical care. Second, their aminotransferase levels were only measured once. Lastly, they were mostly Caucasian, reducing the generalizability of the data. Still, the findings are strong.

“These data, based on a large number of residents in a U.S. community,

suggest that serum levels of AST and ALT obtained in a routine medical care setting are associated with future mortality,” the authors conclude.

Source: Wiley

Citation: Elevated liver enzymes associated with higher future mortality (2008, March 3)
retrieved 18 April 2024 from
<https://medicalxpress.com/news/2008-03-elevated-liver-enzymes-higher-future.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.