

Abnormal liver tests associated with increased death rates in people over 75

August 2 2011

One in six people over 75 are likely to have at least one abnormal liver test and those that have two or more are twice as likely to die from cancer and 17 times more likely to die from liver disease, according to research in the August issue of *Alimentary Pharmacology and Therapeutics*.

UK researchers studied 13,276 patients who were registered with 53 [family doctors](#) and agreed to an in-depth health assessment. Patients were drawn at random from the general population and those who were terminally ill or living in nursing homes were excluded.

"The aim of our study was to see how prevalent abnormal liver tests were in a random sample of people aged 75 plus and examine the association between positive results and deaths from all causes and specific causes" says lead author Dr Kate Fleming from the University of Nottingham.

"Previous studies from The Netherlands, South Korea, the USA and Scotland produced conflicting results and none particularly focused on older people."

The study covered liver tests for abnormal levels of aspartate transaminase (AST), alkaline phosphatase (ALP) and bilirubin, with patients being followed up for an average of just over seven years. The elderly patients with the abnormal liver tests were compared with patients with normal liver tests.

"A wide range of health problems can lead to elevated levels of enzymes in the liver, not just [liver disease](#)" explains Dr Fleming. "These can include heart disease, bone disorders, [kidney disease](#) and striated muscle disorders."

Key findings of the study included:

- Abnormal liver tests are common in elderly people, but were only associated with a modest increase in deaths from all causes.
- 16.1% of the patients had at least one abnormal liver test, 1.5% had two abnormal tests and just 0.07% has three abnormal tests.
- 9.2% of the total sample had abnormal levels of ALP, 5.4% had abnormal bilirubin and 3.3% had abnormal AST.
- Patients with elevated AST measurements tended to be younger and there was an association with alcohol consumption of more than seven units in the previous week. Patients with elevated ALP tended to be older and report lower alcohol consumption.
- Diabetes and dementia were associated with increased AST and ALP and a history of heart attacks with raised ALP. Men were more likely to have increased bilirubin as were people who had never smoked.
- Abnormal AST was associated with a sevenfold increased risk of death from liver disease and a 56% increase in cancer risk. However, only 1.8% of the subjects with an abnormal AST died from liver disease during the follow-up period.
- Abnormal ALP was associated with nearly a six-fold increased risk of death from liver disease. It also raised the risk of death from a number of other illnesses: heart disease (34%), cancer (61%) and respiratory disease (58%). Only 1% of the patients with an abnormal ALP died from liver disease during the follow-up period.
- Abnormal bilirubin was associated with a small 15% increase in death risk, following adjustment for factors such as age, gender,

other health issues, smoking status, alcohol intake and waist-hip ratio.

- Patients who had two or more elevated liver tests faced a 54% increased risk of all-cause mortality and the risk of dying from cancer doubled. They were 17 times more likely to die from liver disease than patients with no abnormal liver tests.

"Our study shows that abnormal liver tests are common in elderly people, but are only associated with a modest increase in deaths from all causes, with specific reference to liver disease, cancer, heart disease and respiratory disease" says Dr Fleming.

"There is currently no evidence that a single abnormal and isolated measurement of AST, ALP or [bilirubin](#) leads to an overwhelming increase in death rates. Given that, the current clinical practice of only referring and actively investigating patients with multiple or persistent abnormalities should be continued.

"Older people represent an increasingly large group of healthcare users in the UK and we hope that this research will provide useful information in an area that has previously suffered from lack of research."

More information: *Alimentary Pharmacology and Therapeutics*. 34, pp324-334. (August 2011). [DOI: 10.1111/j.1365-2036.2011.04718.x](https://doi.org/10.1111/j.1365-2036.2011.04718.x)

Provided by Wiley

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