

Hypertension and fatty liver don't add up in death risk

September 8 2021

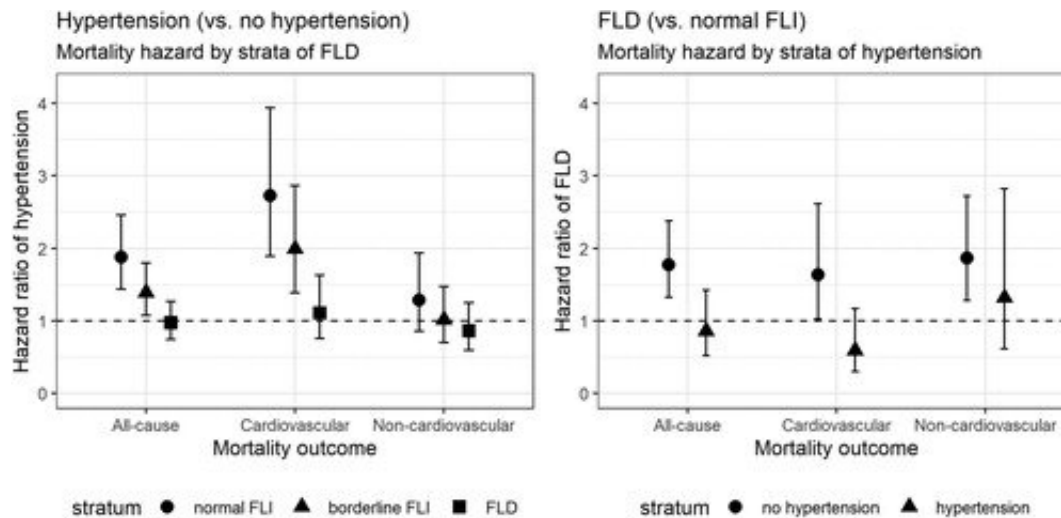


Figure 1. Fully adjusted hazard ratios (HRs) with 95% CIs for all-cause mortality, cardiovascular mortality and non-cardiovascular mortality stratified by fatty liver index and hypertension categories. FLD: fatty liver disease; FLI: fatty liver index. Credit: DOI: 10.1080/00365521.2021.1951836

The combined effect of hypertension and fatty liver disease on mortality does not seem to exceed their separate effects, according to a 34-year follow-up study carried out at the University of Eastern Finland. The results were published in the *Scandinavian Journal of Gastroenterology* and will be discussed at the American Heart Association's Hypertension 2021 Scientific Sessions later this September.

The establishment of risk factors for [cardiovascular disease](#) has shaped clinical practice throughout the past century. Hypertension, or elevated [blood pressure](#), is the most common risk factor of cardiovascular [disease](#). It affects over a billion of the world's population, contributing to 18 million cardiovascular deaths annually. The pathological accumulation of lipids in the liver, known as [fatty liver](#) disease, is another risk factor of cardiovascular disease. While it is less known to the public, fatty liver disease is very common, affecting a quarter of the world's population.

Individual cardiovascular risk factors have been widely studied. However, the body of literature on the combined effects and interactions of risk factors with each other on health is much narrower. Indeed, the newly published study is the first to assess the effect of the coexistence of hypertension and fatty liver disease on mortality.

The population-based study cohort consisted of 1,569 middle-aged Finnish men who took part in the Kuopio Ischaemic Disease Risk Factor Study. The separate and combined effects of different stages of fatty liver disease and hypertension on overall and cardiovascular mortality were assessed in a follow up of 34 years. While fatty liver disease and hypertension associated, both separately and combined, with a substantial risk of all-cause and cardiovascular mortality, the coexistence of the two conditions associated with a similar or even lower overall hazard of mortality than the individual conditions.

If two factors interact with each other regarding an outcome, the effect of their coexistence would either be greater or smaller than the sum of their individual effects. In this study, the researchers found evidence of a negative interaction between fatty liver disease and hypertension on cardiovascular death in a population of Finnish men.

"That means that while both fatty liver and hypertension contribute to cardiovascular mortality alone, when they coexist, they could block each

other's effect to some extent," says the first author of the article Mounir Ould Setti, [medical doctor](#) and researcher at the University of Eastern Finland.

These findings suggest that fatty [liver](#) disease and hypertension might not be completely independent of each other as risk factors of cardiovascular disease as was previously thought. The authors conclude that further research is needed on the topic and recommend adjusting for [fatty liver disease](#) or [hypertension](#) in studies evaluating the effects of the other condition on mortality or cardiovascular disease.

More information: Mounir Ould Setti et al, Negative interaction of fatty liver and hypertension on cardiovascular mortality in non-diabetic men: 34 years of follow-up, *Scandinavian Journal of Gastroenterology* (2021). [DOI: 10.1080/00365521.2021.1951836](https://doi.org/10.1080/00365521.2021.1951836)

Provided by University of Eastern Finland

Citation: Hypertension and fatty liver don't add up in death risk (2021, September 8) retrieved 1 February 2023 from <https://medicalxpress.com/news/2021-09-hypertension-fatty-liver-dont-death.html>

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