Women with Fatty Liver Disease Have a Higher Cardiovascular Risk

A 50-year-old woman with NAFLD has about the same cardiovascular risk as a 67-year-old woman without fatty liver disease.

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Women with non-alcoholic fatty liver disease (NAFLD) had a higher risk of cardiovascular events such as chest pain and heart attacks than women without fatty livers, and about the same risk as men with NAFLD, according to a report at the American Association for the Study of Liver Diseases (AASLD) Liver Meeting, held this week in Washington, DC.

These findings show that the normal protective effect of female sex on cardiovascular risk is lost in women with fatty liver disease, Alina Allen, MD, of the Mayo Clinic in Rochester, Minn., told reporters at an AASLD press conference.

"We noted that in subjects with NAFLD, the risk for these events was higher in women than in men, contrary to those without the liver disease," Allen said in an AASLD press release. "In NAFLD, the protective effect of the female sex on cardiovascular risk disappears. Additionally, we noted cardiovascular events started at an earlier age for these women than in the general population."

Nonalcoholic fatty liver disease and its more severe form, non-alcoholic steatohepatitis (NASH), refer to the buildup of fat in the liver in people who do not drink heavily. Often associated with obesity and metabolic syndrome, fatty liver is now the most common chronic liver disease, affecting one in four Americans, according to Allen. Over time, fat accumulation in the liver and the accompanying inflammation and buildup of scar tissue (fibrosis and cirrhosis) can interfere with normal liver function and lead to liver cancer.

Fatty liver disease is also associated with a higher risk of cardiovascular events and, in fact, people with NAFLD are more likely to die of heart disease than of liver disease, Allen said. In the general population, women have about a 20 percent lower risk of cardiovascular events than men and experience heart attacks about five years later. Allen's team aimed to determine if this is also the case for women with fatty livers.

The researchers evaluated a community cohort of adults diagnosed with NAFLD in Minnesota

between 1997 and 2014. Each of the 3,869 individuals in this cohort was matched with multiple people in the general population in the same community according to age and sex, for a total of 15,209 control subjects.

About half of the study participants were women and the median age was about 53. Women and men with NAFLD had more cardiovascular risk factors at baseline, including higher body mass index and higher rates of preexisting heart disease, diabetes and high blood pressure.

Over a follow-up period of up to about 20 years, the researchers looked at new cardiovascular events, including angina (chest pain), myocardial infarctions (heart attacks), heart failure, strokes and atrial fibrillation (a type of irregular heartbeat), comparing their likelihood among NAFLD patients and the general-population group. They identified a total of 1,375 cardiovascular events and 1,551 deaths during follow-up.

At the time of NAFLD diagnosis, women and men with fatty liver disease were about equally likely to have had chest pain, heart failure and strokes. These rates were higher than those for either women or men without NAFLD. Men with NAFLD had more heart attacks and atrial fibrillation than women with NAFLD, but among both men and women with NAFLD, these rates were higher than those of people of the same sex in the general population.

During follow-up, women in the general population had a lower likelihood of new cardiovascular disease compared with men. Among people with NAFLD, however, incidence rates for women and men were comparable. Similarly, women and men with NAFLD were about equally likely to develop diabetes or high blood pressure if they did not already have it, and they were much more likely to do so than people of either sex without NAFLD.

Within the general population, being female decreased the likelihood of cardiovascular events by 23 percent, or by 26 percent after controlling for various cardiovascular risk factors. But the risk was close to equal for women and men with NAFLD. However, despite the similarity in their rates of cardiovascular events, women with NAFLD had a higher survival rate than men with NAFLD.

The researchers found that women with fatty liver disease experienced cardiovascular events at a younger age, on average. They calculated that the cardiovascular risk of a 50-year-old woman with NAFLD was similar to that of a 53-year-old man with NAFLD, a 58-year-old man without NAFLD or a 67-year-old woman without NAFLD.

“The female advantage in cardiovascular protection disappears in NAFLD, even when all cardiovascular risk factors are similar,” the researchers concluded.

Based on these findings, they suggested that cardiovascular risk assessment in patients with NAFLD should take sex-related differences into account, as women with fatty liver disease may require more aggressive prevention measures than men to avoid adverse cardiovascular outcomes.

Aspirin and statins may be used to reduce the occurrence of cardiovascular events in people at

risk. There are currently no standard medical treatments for NAFLD and NASH, although several therapies are under study. However, lifestyle changes such as improving diet, getting more exercise and maintaining a normal weight can reduce the likelihood of developing fatty liver disease or reduce its severity.

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