Daily Aspirin Reduces Liver Fat in People With MASLD

People who took low-dose aspirin every day were more likely than placebo recipients to lose at least 30% of liver fat.

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Taking daily low-dose aspirin over a six-month period lowered the amount of liver fat in people with metabolic dysfunction-associated steatotic liver disease (MASLD), according to new study findings published in JAMA.

Arising from the accumulation of fat in the liver, MASLD (the new name for non-alcoholic fatty liver disease, or NAFLD) and its more severe form, metabolic dysfunction-associated steatohepatitis (MASH), are responsible for a growing proportion of advanced liver disease worldwide. Over time, MASLD can lead to inflammation, liver fibrosis, cirrhosis and even liver cancer.

Until the approval of Rezdiffra (resmetirom) for MASH earlier this month, there were no approved medical therapies for fatty liver disease, so management has relied on lifestyle changes such as weight loss and exercise. But an inexpensive, commonly used over-the-counter medication may also help reduce liver fat at an early stage.

Tracey Simon, MD, MPH, of Massachusetts General Hospital, and colleagues set out to test whether six months of daily aspirin would lower liver fat in people with MASLD. In addition to its use as a pain reliever, aspirin also reduces inflammation. For this Phase II trial (NCT04031729), the researchers enrolled 80 people who had MASLD but had not yet progressed to cirrhosis. Enrollment took place between August 2019 and July 2022, and the follow-up period ran through February 2023; 89% completed the study.

More than half (55%) were women, about 80% were white and the average age was 48 years. They had a mean body mass index of 33.7, indicating obesity, and an average liver fat fraction of 35%—a sign of moderate steatosis. About 40% had at least moderate (Stage F2) fibrosis based on liver stiffness measurements.

The participants were randomized to receive either 81 milligrams of aspirin (the dose in baby aspirin) or a placebo every day for six months. Changes in liver fat content were measured by proton magnetic resonance spectroscopy and MRI proton density fat fraction.

Over six months of follow-up, people assigned to the aspirin group saw an average 6.6% absolute reduction in liver fat fraction, while those in the placebo group gained an average of 3.6% as measured by magnetic resonance spectroscopy. There was a mean 30.0% relative reduction in liver fat content in the aspirin group, compared with a relative increase of 8.8% in the placebo group. About 43% of people in the aspirin group experienced at least a 30% relative decrease in liver fat—the amount associated with a clinical benefit—compared with 13% of those who received the placebo. Liver fat as measured by MRI proton density fat fraction also decreased significantly more in the aspirin group.

People assigned to the aspirin group saw significantly greater improvements in liver enzyme levels and non-invasive measures of inflammation and fibrosis. Results were consistent when looking at just the subset of participants with more advanced liver fibrosis at baseline.

Aspirin therapy was safe and well tolerated. Thirteen people (33%) in each group experienced adverse events, most commonly upper respiratory tract infections or joint pain, but none were deemed serious. One person in the aspirin group experienced drug-related heartburn. No bleeding events were observed, a potential side effect of aspirin use.

“In this preliminary randomized clinical trial of patients with MASLD, 6 months of daily low-dose aspirin significantly reduced hepatic fat quantity compared with placebo,” the researchers concluded. Since this was a preliminary study, a larger trial is needed to confirm these findings, analyze clinical outcomes and determine how long aspirin’s effects last, they noted.

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