High Testosterone in Premenopausal Women Linked to NASH

In these women, higher testosterone ramped up the likelihood of abdominal fat buildup.

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Younger premenopausal women with non-alcoholic fatty liver disease (NAFLD) had higher levels of testosterone and were at greater risk of developing non-alcoholic steatohepatitis (NASH) and fibrosis. Higher testosterone levels also raised the chances of having abdominal fat accumulation. These study results were published in Clinical Gastroenterology and Hepatology.

“Testosterone may represent an early risk factor for NASH progression in young women, prior to their onset of more dominant, age-related metabolic risk factors,” wrote Monika Sarkar, MD, of the University of California San Francisco, and colleagues.

Arising from the accumulation of fat in the liver, NAFLD and its more severe form, NASH, are responsible for a growing proportion of advanced liver disease worldwide. As a result of inflammation, NAFLD can lead to the buildup of scar tissue (fibrosis), cirrhosis (advanced scarring) and even liver cancer. Women have a higher likelihood of developing NASH, cirrhosis and end-stage liver disease. With no effective approved medical therapies, disease management is dependent on lifestyle changes, such as weight loss and exercise.

In women, testosterone is known to increase the risk of developing NAFLD, but its impact on liver injury is unknown. The research team sought to identify any links between testosterone levels in premenopausal women with biopsy-confirmed NAFLD.

They included 207 premenopausal women with NAFLD who were chosen through the multicenter NASH Clinical Research Network. Their median age was 35 years, and 73% were white. Most of them (93%) had abdominal fat, some two thirds had NASH (69%) and fibrosis (67%) and 15% had advanced fibrosis.

The researchers reported that higher levels of testosterone were linked to severe NAFLD in

younger women. Free testosterone in the youngest age group was independently associated with NASH, NASH-related fibrosis and advanced fibrosis. Within this group, NASH and related fibrosis increased proportionally with higher levels of testosterone. Moreover, testosterone levels corresponded with abdominal fat accumulation across premenopausal women of all ages.

“In young women with NAFLD, higher testosterone levels conferred a twofold higher risk of NASH and NASH fibrosis and increased risk of abdominal adiposity, supporting a potential mechanistic link of abdominal fat on testosterone-associated liver injury,” concluded the researchers. “Our findings underscore the need for studies to evaluate testosterone as a potential novel therapeutic target in young women with NAFLD, with implications beyond young women

with androgen excess.”

Click here to read the study in Clinical Gastroenterology and Hepatology.

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