糖質制限ダイエットは心房細動に関連する (Abstract 19-A-13205)

糖質制限は心房細動の発生率を増加させる

Restriction of carbohydrates increases incidence of atrial fibrillation

毎日のカロリーを穀物、果物およびデンプン質の多い野菜から摂取する割合の低い人々は、心房細動（AFib）を発生する可能性が有意に高い、とAmerican College of Cardiology's 68th Annual Scientific Session で発表された。研究では、約 14,000 人の 20 年以上にわたる医療記録を分析した。研究者らは、対象者を炭水化物の摂取量により低、中等度、高摂取群に分類した。低摂取群では AFib 発生率が、中等度摂取群に比べ 18% 高い傾向にあり、高摂取群に比べ 16% 高い傾向にあった。

Full Text

Low-carb diets are all the rage, but can cutting carbohydrates spell trouble for your heart? People getting a low proportion of their daily calories from carbohydrates such as grains, fruits and starchy vegetables are significantly more likely to develop atrial fibrillation (AFib), the most common heart rhythm disorder, according to a study presented at the American College of Cardiology's 68th Annual Scientific Session.

The study, which analyzed the health records of nearly 14,000 people spanning more than two decades, is the first and largest to assess the relationship between carbohydrate intake and AFib. People with AFib are five times more likely to have a stroke than people without the condition. It can also lead to heart failure.

Restricting carbohydrates has become a popular weight loss strategy in recent years. While there are many different low-carbohydrate diets including the ketogenic, paleo and Atkins diets, most emphasize proteins while limiting intake of sugars, grains, legumes, fruits and starchy vegetables.

"The long-term effect of carbohydrate restriction is still controversial, especially with regard to its influence on cardiovascular disease," said Xiaodong Zhuang, MD, PhD, a cardiologist at the hospital affiliated with Sun Yat-Sen University in Guangzhou, China, and the study's lead author. "Considering the potential influence on arrhythmia, our study suggests this popular weight control method should be recommended cautiously."

The findings complement previous studies, several of which have associated both low-carbohydrate and high-carbohydrate diets with an increased risk of death. However, while previous studies suggested the nature of the non-carbohydrate component of the diet influenced the overall pattern observed, the new study did not.

"Low carbohydrate diets were associated with increased risk of incident AFib regardless of the type of protein or fat used to replace the carbohydrate," Zhuang said.

Researchers drew data from Atherosclerosis Risk in Communities (ARIC), a study overseen by the National Institutes of Health that ran from 1985-2016. Of the nearly 14,000 people who did not have AFib when they enrolled in the study, researchers identified nearly 1,900 participants who were subsequently diagnosed with AFib during an average of 22 years of follow-up.

Study participants were asked to report their daily intake of 66 different food items in a questionnaire. The researchers used this information along with the Harvard Nutrient Database to estimate each participant's daily carbohydrate intake and the proportion of daily calories that came from carbohydrates.

On average, carbohydrates comprised about half of calories consumed. The Dietary Guidelines for Americans recommend that carbohydrates make up 45 to 65 percent of total daily calorie intake.

Researchers then divided participants into three groups representing low, moderate and high carbohydrate intake, reflecting diets in which carbohydrates comprised less than 44.8 percent of daily calories, 44.8 to 52.4 percent of calories, and more than 52.4 percent of calories, respectively.

Participants reporting low carbohydrate intake were the most likely to develop AFib. These participants were 18 percent more likely to develop AFib than those with moderate carbohydrate intake and 16 percent more likely to develop AFib than those with high carbohydrate intake.

Several potential mechanisms could explain why restricting carbohydrates might lead to AFib, Zhuang said. One is that people eating a low-carbohydrate diet tend to eat fewer vegetables, fruits and grains—foods that are known to reduce inflammation. Without these foods people may experience more inflammation, which has been linked with AFib. Another possible explanation is that eating more protein and fat in lieu of carbohydrate-rich foods may lead to oxidative stress, which has also been associated with AFib. Finally, the effect could be related to an increased risk of other forms of cardiovascular disease.

Zhuang said that while the research shows an association, it cannot prove cause and effect. A randomized controlled trial would be needed to confirm the relationship between carbohydrate intake and AFib and assess the effect in a more ethnically diverse population. In addition, the study did not track participants with asymptomatic AFib or those who had AFib but were never admitted to a hospital, nor did it investigate different subtypes of AFib, so it is unknown whether patients were more likely to have occasional episodes of arrhythmia or persistent AFib. The study did not account for any changes in diet that participants may have experienced after completing the questionnaire.

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