# Certain cancers come with higher risk of serious heart rhythm disorder

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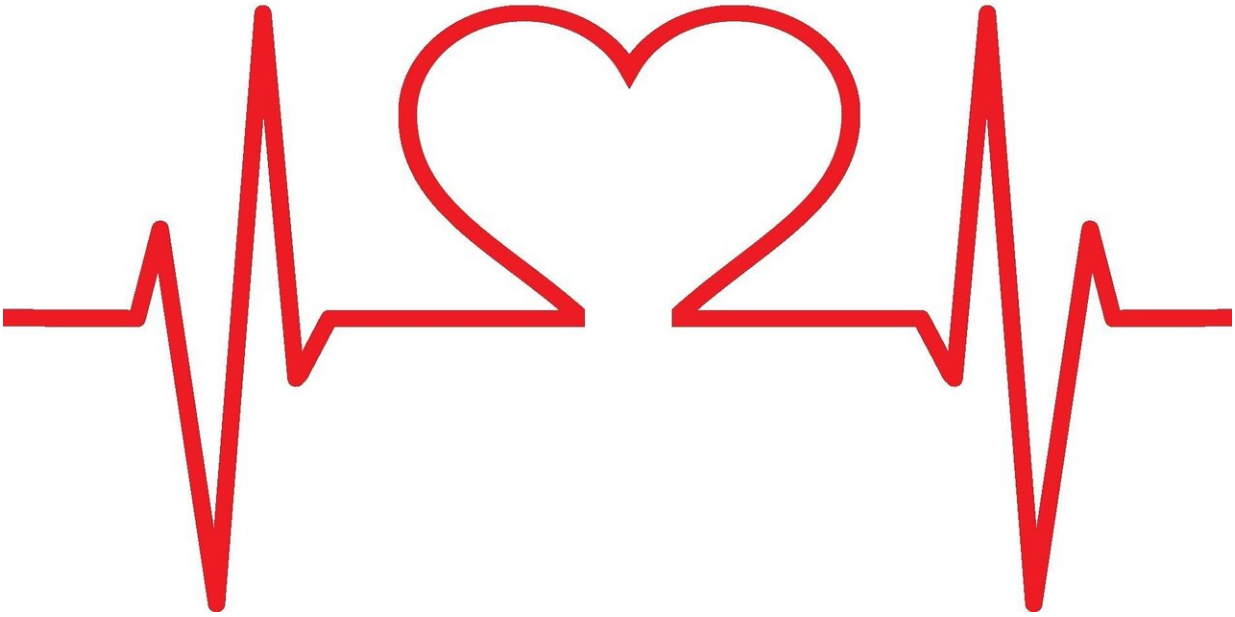

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People with a history of cancer have an over two-fold risk of developing atrial fibrillation (AFib), the most common heart rhythm disorder, compared to the general population, according to research presented at the American College of Cardiology's Annual Scientific Session Together with World Congress of Cardiology (ACC.20/WCC). In particular, people who had prostate cancer had the highest burden of AFib, followed by those with colon, lung and breast cancers.

While earlier studies have shown that people with cancer are at greater risk for developing AFib at the time of cancer diagnosis, prior to any treatment and after therapy is initiated, researchers said this is the first study to examine AFib's association with specific cancer types. With AFib, the heart doesn't always beat or keep pace the way it should, which can lead to palpitations, dizziness and fatigue. If untreated, it can lead to blood clots, stroke and heart failure. People with AFib are five times more likely to have a stroke than people without the condition.

"When we looked at everyone with some form of AFib, those with certain types of cancer were more likely to have heart rhythm abnormalities, and this trend persisted even after accounting for other cardiovascular risk factors and disease," said Muhammad Khan, MD, a resident at St. Mary Medical Center in Langhorne, Pennsylvania, and the study's lead author. "We found 2.3-fold increased odds of having AFib with all cancers studied. There was a greater than 50% increased risk of AFib in prostate, colon and lung cancer patients. Of these three, those with prostate cancer had the highest risk of AFib."

The findings suggest that other factors related to the specific type of cancer itself may be contributing to AFib in these patients, Khan said.

"For example, these cancers may be associated with higher mortality due to circulating pro-coagulants and greater systemic inflammation, but this relationship has yet to be studied," he said. "Based on our findings, certain patients should be considered at higher risk of AFib and may benefit from cardiac evaluation and appropriate treatments, whether it be with medication or ablative techniques, to help improve the survival rates in the long-term."

Drawing on a data set known as the National Inpatient Sample, researchers analyzed the records of more than 143 million adult patients who visited a hospital in the United States between 2012 and 2015. Of

these, 10% (roughly 14.5 million people) were found to have some form of AFib. Researchers then examined medical records for these patients to determine how often AFib and cancer coexisted and to determine whether people with certain cancer types were more likely to have this heart rhythm abnormality.

After adjusting for known cardiovascular risk factors and other heart conditions that could lead to AFib (for example, hypertension, diabetes, coronary artery disease, cardiomyopathy and valvular disorder), the odds of having AFib with any cancer was more than twice what would be expected. Prostate cancer ranked highest in association with AFib, followed by breast, lung, colon and non-Hodgkin's lymphoma. Death rates were also more likely among AFib patients who had prostate cancer, compared to those without AFib (3.28 vs. 2.31%); similar comparisons show the chance of dying was higher in non-Hodgkin's lymphoma (1.64 vs. 1.61%) and colon cancer (2.46 vs. 2.2%).

Khan said that he was surprised about the higher incidence of AFib with prostate cancer when compared with other cancers studied. While the researchers do not know why this might be, they have some ideas.

"The mean age of prostate cancer diagnosis and AFib is around the same—generally 66 years—so there may be a correlation between the two due to the similar age of onset. Given the older age of onset, these patients tend to have more comorbidities that may contribute to them developing AFib," Khan said.

Researchers were unable to distinguish whether AFib cases were new, chronic or paroxysmal (AFib that comes and goes and generally stops on its own). They were also unable to track which cancer treatments patients received. Many lifesaving cancer treatments, including certain chemotherapies and targeted drugs, are known to cause heart damage.

Future studies are needed to clarify what is behind the development of AFib in cancer patients, Khan said. Researchers need to investigate which inflammatory markers may have a greater association with the development of AFib and better understand how to treat AFib more effectively and possibly prevent its onset in cancer patients.

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