Transfusions increase clot risk in hospitalized cancer patients

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Blood transfusions used to treat anemia in patients with cancer are associated with an increased risk of life-threatening blood clots, at a similar rate as other treatments for cancer-induced anemia, according to scientists at the University of Rochester Medical Center.

These findings, published in Tuesday's *Archives of Internal Medicine*, pose a quandary for doctors who want to prevent thromboembolism – one of the leading causes of illness and death in people with cancer.

"We've known that medications used for the treatment of anemia in cancer cause blood clots and using transfusions was an alternative that some doctors chose to try to avoid this problem. This study shows that transfusions may be no better for patients," says Alok Khorana, M.D., lead author on the study. "We need to be cautious in the use of transfusions and search for ways to reduce our patients' risk of developing blood clots, which are dangerous."

When patients receive chemotherapy, doctors watch closely for signs of anemia, a common side-effect that causes fatigue, dizziness and headaches. To combat the anemia, oncologists prescribe medications known as erythropoiesis-stimulating agents (ESAs), which boost red-blood-cell production.

Recent research has shown that these medications raised patients' risk of developing blood clots and the Food and Drug Administration issued restrictions for use last year. An alternative recommendation is to use red

blood cell transfusions.

In this retrospective study, researchers examined the risk of developing blood clots for hospitalized patients who received blood transfusions. Scientists analyzed discharge summaries in the University Health System Consortium which includes information on more than 500,000 people hospitalized at 60 medical centers from 1995-2003.

Khorana and his team studied data on more than 70,500 patients who received a blood transfusion. Among those patients, 7.2 percent developed venous thromboembolism (VTE) and 5.2 percent developed arterial thromboembolism (ATE.) That's significantly higher than the 3.8 percent and 3.1 percent rates, respectively, for other patients in the study who did not receive transfusions. However, the figures are comparable to the data on ESAs.

People with cancer are at risk for developing blood clots in their arms or legs, and occasionally, portions of the blood clot can break off and migrate through the circulatory system to the lungs, a condition called pulmonary embolism, which can be life-threatening. Arterial thrombosis also occurs more frequently in cancer patients than in non-cancer patients. This can manifest as a heart attack or a stroke, and can also be fatal.

The investigators, who were funded by the National Cancer Institute and National Heart, Lung and Blood Institute, focused solely on people who were hospitalized during cancer care. However, a majority of cancer patients receive outpatient care. Scientists expect to study thrombosis risk for that primary group of patients as well, Khorana said.

"We need to understand why people who get transfusions are more likely to get blood clots," said Charles Francis, M.D., professor of Medicine and director of the Hemostasis and Thrombosis program.

Source: University of Rochester