

## Costly blood clots more common than expected among cancer patients

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An analysis of more than 30,000 cancer patients has shown that blood clots are a more common complication than doctors may realize, causing additional hospitalizations and driving up the cost of care, according to a study led by a Duke Cancer Institute researcher.

The study, which will be reported Sept. 26 at the 2011 European Multidisciplinary [Cancer](#) Congress in Stockholm, found that as many as one in five patients risk developing a blood clot called venous [thromboembolism](#), or VTE, within a year of getting treatment for some types of cancers.

In up to 2 percent of cases the complication is deadly. Clots that form in veins deep in the legs or [pelvis](#) can travel to the arteries of the lungs and block blood flow. VTEs are also costly. [Cancer patients](#) who develop the clots require medication and hospitalizations that contribute to an average care bill of \$110,362, compared to \$77,984 for those who do not have VTEs, the study authors reported.

"Direct [medical costs](#) of healthcare are significantly greater among cancer patients experiencing a VTE and still do not include caregiver expenses, out of pocket costs and the intangible costs of pain and suffering," said lead author Gary H. Lyman, M.D., M.P.H., a professor of medicine and director of the [Comparative Effectiveness](#) and Outcomes Research Program at Duke.

In conducting the study, Lyman and colleagues analyzed 30,552 cancer

cases from the InVision™ Data Mart Multiplan/ Integrated Health Care Information Solutions, a large cache of data on more than 17 million U.S. medical patients. The records were of ordinary cancer patients, not participants in clinical trials who tend to be enrolled because they have fewer health issues and therefore develop fewer complications.

The researchers focused on diagnoses of lung, pancreatic, stomach, colon/rectum, bladder and ovarian cancers among patients who began chemotherapy during a four-year period ending in 2008.

Among those in the study group, the risk of developing a VTE within 3.5 months of starting treatment varied widely depending on the type of cancer diagnosed. Bladder cancer carried the lowest risk, at 4.8 percent, and pancreatic cancer had the highest risk, at 11.9 percent. (Colon/rectum 6.1 percent; ovary 6.2 percent; lung 8.5 percent; stomach 8.5 percent)

After a year of treatment, risks nearly doubled across many of the six cancer types, with 9.9 percent of bladder cancer patients and 21.5 percent of pancreatic cancer patients developing clots. (Colon/rectum 11.9 percent; ovary 11.4 percent; lung 14.8 percent; stomach 16.7 percent)

Lyman said scientist don't fully understand why VTEs form during cancer treatment, but have identified certain contributing factors, including blood clotting agents released by tumors, side effects of chemotherapy, and pre-existing health conditions such as obesity and anemia.

He said knowing which patients are at highest risk of developing [blood clots](#) could lead to better preventive use of blood thinners. But the preventive use of [blood](#) thinners comes with its own risk of potentially dangerous bleeding. A risk score for identifying high risk patients for

VTE is based on the type of cancer they have and the other known contributing factors.

"We need more data from randomized control trials in the higher risk populations that would demonstrate a favorable benefit-to-harm ratio from such preventive measures," Lyman said. "Further studies are also needed on the complications of cancer treatment and the associated costs in real-life cancer patients to guide future clinical decisions and more personalized supportive care in patients starting cancer chemotherapy."

Provided by Duke University Medical Center

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