Medical Xpress

Detecting blood clot risk using biomarkers

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Cancer is one of the hardest medical conditions to overcome, and for those who do so, the battle often does not stop at remission. Many cancers predispose patients to develop blood clots, particularly patients who are diagnosed at a late stage, which often complicates their treatment and reduces survival rates.

These blood clots can become dislodged, and if a clot travels to the lungs, it can cause immediate distress and puts a patient at a high risk of death. In the United States, blood clots affect between 300,000 and 600,000 people each year and approximately 60,000 to 100,000 of those individuals will die, according to the Centers for Disease Control and Prevention.

Researchers at Boston Medical Center (BMC) and Boston University School of Medicine (BUSM) aim to increase survival rates among these patients by identifying new and validating existing biomarkers, or substances in the blood, that indicate if a patient is at high risk for developing a clot. Patients at BMC who are newly diagnosed with cancer will be asked if they would like to donate their blood for the study. The researchers will test the blood samples for biomarkers that may indicate whether a person has a high risk for blood clots.

This collection of blood samples will be part of a comprehensive study of thrombosis biomarkers from populations who are currently underrepresented in biobanking projects and clinical research studies. Approximately 59 percent of BMC patients come from underserved populations. Many of BMC's patients present to the hospital with more

advanced disease due to challenging access to health care or cancer screening.

"Identifying and standardizing biomarkers may provide clinicians with important information to improve patient care," said Chris Andry, MPhil, PhD, vice chair for operations and management and administrative director for pathology and laboratory medicine at BMC, who will lead the study in collaboration with co-investigators Debbie Stearns-Kurosawa, PhD, associate professor of pathology and laboratory medicine and co-director of the Coagulation Research Laboratory (BUSM), and Mark Sloan, MD, a physician in hematology and oncology at BMC and assistant professor of medicine at BUSM.

Additionally, it is challenging for researchers to know if they have accurately measured the biomarkers, taking into account all the variables such as time to assay or temperature changes that may impact how the blood markers are measured. This study will deliberately evaluate these variables to assist with guideline development for hospital laboratories to use when testing these biomarkers.

"Once we see how these biomarkers stand against time, we can determine appropriate timelines for clinical assessments to ensure that they are as accurate as possible in identifying risk," said Andry, who also is associate professor of pathology and laboratory medicine at BUSM. "This information, in combination with patient education, has the potential to increase survival rates by being able to proactively treat these patients for blood clots."

Provided by Boston University Medical Center