Adding venous thromboembolism to the CDI checklist

by Linda Renee Brown, RN, MA, CCDS, CCS, CDIP

The annual incidence of an initial venous thromboembolism (VTE) event, either a pulmonary embolus (PE) or a deep vein thrombosis (DVT), is approximately 0.1% in the United States, with the highest incidence among the elderly and a recurrence rate of about 7% at six months. At the same time, thrombotic stroke is the third leading cause of death in the United States. Virchow’s triad theory suggests that VTE occurs due to three factors:

1. Altered blood flow
2. Vascular endothelial injury
3. Alterations in the blood constituents, or hypercoagulable state

A patient with an abnormally increased tendency toward coagulation may be said to experience a hypercoagulable state. Hypercoagulable states can be further specified as primary or secondary. Primary hypercoagulable states are inherited thrombophilia conditions caused by deficiencies or defects of the physiologic anticoagulants or increased coagulation factors, according to the journal Cardiovascular Medicine (2007). The major causes of inherited thrombophilia include factor V Leiden mutation, antithrombin deficiency, protein S and protein C deficiency, and prothrombin gene mutation.

Secondary, or acquired, hypercoagulable states are a varied group of disorders with an associated elevated risk for developing thromboses. Many conditions can effect changes in the coagulation system, resulting in a hypercoagulable state. Secondary hypercoagulable state, when documented in the medical record, is a comorbidity that can increase reimbursement, impact length of stay, and reflect a higher severity of illness and risk of mortality, but it is often underdocumented and underreported.

Many clinicians easily recognize that patients may present a higher risk of thrombosis with evidence of a previous thrombus, recent major surgery, new trauma, malignancy, pregnancy, the use of oral contraception, antiphospholipid syndrome, or the use of a central venous catheter.

Patients undergoing surgery who have not received VTE prophylaxis experience a rate of DVT from 15–30%, and fatal PEs from 0.2%–0.9%, according to a 2007 article in the journal Circulation. Trauma patients run almost a 60% risk of VTE. Among cancer patients, at least 50% are found to have a VTE at autopsy.

Increases in blood viscosity, fibrinogen, and factor VIII during pregnancy increase the risk of VTE in pregnant women six times higher than that of nonpregnant women. The prevalence of VTE in pregnancy is 1:600, and PE causes 9% of all deaths during pregnancy. In one study, currently available oral contraceptives increased the risk of VTE to five times that of a non-user.

The risk increases within four months of the start of therapy and remains unchanged, regardless of duration of use, until three months after the end of therapy.

However, additional conditions seen among the inpatient population also may increase the risk of developing VTE. Diabetic patients are at higher risk of thrombosis; 80% of Type 2 diabetic deaths may be attributed to thrombi. The risk of stroke and myocardial infarction is significantly higher in the diabetic population.

Researchers have found modifications in the coagulation pathway in diabetic patients, including abnormal coagulation screening tests and altered clotting factor levels. Enhanced platelet aggregation and activation, along with an inhibited fibrinolytic system associated with insulin resistance, can suggest a hypercoagulable prothrombotic state that increases risk of a cardiovascular event.

In metabolic syndrome, in which we find obesity, chronic inflammation, and insulin resistance, we also find a hypercoagulable state associated with increased clotting factors and an inhibited fibrinolytic pathway. Elevated cholesterol levels can impact platelet aggregation and
clot formation. Smoking causes damage to the endothelium, adhesion of platelets, release of growth factor, and reduced tPA production that can result in a prothrombotic state. Immobility associated with travel can triple the risk of thrombosis, particularly in obese patients. Heart failure, chronic renal failure, thyroid disease, and sepsis can also result in a prothrombotic state.

Documentation of secondary hypercoagulable state must, as with all secondary diagnoses, meet the definition of a secondary diagnosis, to include at least one of the following:
- Clinical evaluation
- Therapeutic treatment
- Diagnostic procedures
- Extended length of stay
- Increased nursing care and/or monitoring

In all physician documentation, the diagnosis to the correct degree of specificity, the supporting clinical indicators, and the treatment plan must always be in alignment.

While encouraging physicians to capture this comorbidity when clinically warranted, we must also emphasize that documentation of secondary hypercoagulable state is incomplete without referencing the indicators that support the diagnosis, as well as how it is being evaluated, treated, or diagnosed.

Documentation of anticoagulant therapy in patients at risk for VTE should not only be associated with meeting core measures requirements, but should also be linked to the secondary hypercoagulable state and the underlying conditions that put the patient at risk.

The goal of any clinical documentation program is to paint the full clinical picture, so consider adding secondary hypercoagulable state to the paintbox.

Editor’s note: Brown is the director of CDI for Tanner Health System in Carrollton, Georgia. She has experience in critical care, nursing education, case management, long-term care, and, of course, CDI. She thinks the only thing better than writing for ACDIS is snuggling with her cat Thomas. Contact Brown at catladym@gmail.com.

ADDITIONAL READING

Use these resources for additional information related to venous thromboembolism.