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Commentary

Melanoma Associated Venous Thromboembolism

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DESCRIPTION

Deep Vein Thrombosis (DVT) is a leading cause of chronic and mortality globally that may be prevented. Venous Thromboembolism (VTE), which comprises DVT and Pulmonary Embolism (PE), affects 1 in 1,000 persons and is responsible for 60,000-100,000 fatalities each year. A careful balance of pro- and anti-coagulant substances is required for normal blood physiology. Virchow's Triad boils down a slew of DVT risk factors into three key aspects that promote thrombus formation: venous stasis, vascular damage, and hypercoagulability. To improve the sensitivity and specificity of DVT diagnosis, clinical, biochemical, and radiological techniques are performed. In order to treat DVT, anticoagulation therapy is required. Vitamin K-Antagonists (VKAs), such as warfarin with heparin or fractionated heparin bridging, have been the mainstay treatment for DVT with few exceptions. A number of large-scale clinical studies have recently confirmed the use of Direct Oral Anticoagulants (DOACs) in certain instances instead of warfarin.

Melanoma thromboembolism (including Venous Thromboembolism (VTE) and arterial events) is extremely dangerous for cancer patients and is linked to a lower survival rate. Despite significant advancements in cancer therapy, the risk of VTE has grown in recent years; VTE rates are also dependent on the kind of cancer (the pancreatic, stomach, and primary brain tumors are the most dangerous), as well as individual patient and cancer treatment characteristics. Multiple cancer-specific mechanisms of VTE have been identified, and they can be divided into two categories: mechanisms in which the tumors expresses proteins that alter host systems, such as platelet and leukocyte levels, and mechanisms in which the tumors expresses procoagulant proteins released into the circulation that directly activate the coagulation cascade or platelets, such as tissue factor and podoplanin, respectively.

Since the signs and symptoms of VTE are often non-specific, diagnosis needs a clinical examination, pre-test probability appraisal, and objective diagnostic testing with ultrasonography or Computer Tomography (CT). Patients at risk of VTE have been identified using risk assessment techniques that have been validated. Primary VTE prevention (thromboprophylaxis) has long been advocated in hospital and post-surgical settings, and is now available as an outpatient alternative for high-risk cancer patients. Anticoagulant medication, such as low molecular weight heparin or newer choices such Direct Oral Anticoagulants, is the cornerstone of treatment. Personalized therapy that takes into account the risk of bleeding as well as patient preferences is critical, especially because a diagnosis of VTE is typically considered even more unpleasant by patients than a cancer diagnosis, and can have a significant impact on quality of life.

Cancers of the pancreas, uterine, lung, stomach, and kidney, as well as primary brain tumors, are all associated with a significantly increased incidence of VTE. Patients with advanced-stage cancer tend to be more susceptible to VTE. The probability of cancer patients developing VTE increased with cancer stage in a population-based cohort research, with adjusted relative risks of 2.9, 2.9, 7.5, and 17.1 for stage I, II, III, and IV cancer, respectively.

Some malignancy histological subtypes have been associated to an increased incidence of VTE. Lung and ovarian cancer histological subtypes, for example, have different degrees of elevated risk for VTE, but colon and breast cancer histological subtypes are not predictive of cancer-associated VTE incidence. Patients with non-small cell lung cancer had a higher chance of adenocarcinoma than squamous cell carcinoma, according to studies. According to several researches, mucin-producing adenocarcinomas, such as those of the pancreas, lung, and gastrointestinal tract, has the highest prevalence of cancer-related VTE. The incidence of VTE in different histological subtypes of breast and colon cancer, on the other hand, did not differ significantly.

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