

2nd International Conference on Hematology & Blood Disorders

September 29-October 01, 2014 DoubleTree by Hilton Baltimore-BWI Airport, USA

Thromboembolism for hematology disorder

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Thromboembolism encompasses of 2 interrelated conditions that are part of the same spectrum, deep venous thrombosis (DVT) and pulmonary embolism (PE). PE is the obstruction of blood flow to 1 or more arteries of the lung by a thrombus lodged in a pulmonary vessel. PE and DVT can occur in the setting of disease processes, following hospitalization for serious illness, or following major surgery. A thrombus is a solid mass composed of platelets and fibrin with a few trapped red and white blood cells that forms within a blood vessel. Hypercoagulability or obstruction leads to the formation of a thrombus in the deep veins of the legs, pelvis, or arms. As the clot propagates, proximal extension occurs, which may dislodge or fragment and embolize to the pulmonary arteries. This causes pulmonary artery obstruction, and the release of vasoactive agents (i.e. serotonin) by platelets increases pulmonary vascular resistance. The arterial obstruction increases alveolar dead space and leads to redistribution of blood flow, thus impairing gas exchange due to the creation of low ventilation-perfusion areas within the lung. Patient-related factors include age older than 40 years, obesity, varicose veins, the use of estrogen in pharmacological doses (i.e. oral contraceptives or hormone replacement therapy), and immobility. Disease states such as malignancy, congestive heart failure, nephrotic syndrome, recent myocardial infarction, inflammatory bowel disease, spinal cord injury with paralysis, and pelvic, hip, or long-bone fracture confer increased risk of thromboembolic disease. The incidence of DVT is higher in patients who have undergone knee surgery. Fatal PE developed in 1-5% of patients. With PE, the patient often experiences acute onset of shortness of breath; sometimes the patient even pinpoints the moment of distress. Complaints related to signs of DVT, lower extremity swelling, and warmth to touch or tenderness may be present. With a smaller PE near the pleura, the patient may complain of pleuritic chest pain, cough, or hemoptysis. Sometimes, massive PE can present with syncope. Some patients have signs of DVT, lower extremity swelling, and tenderness and warmth to touch. Sequel of treated DVT includes a post thrombotic syndrome (postphlebitic syndrome), which is a chronic complication of venous thromboembolism characterized by pain and swelling. The results from an open-label, randomized, controlled trial suggested that additional treatment with catheter-directed thrombolysis using alteplase (recombinant tissue plasminogen activator, or rt-PA) reduces the development of post thrombotic syndrome, prompting the authors to suggest that it be considered for patients at low risk of bleeding who have high proximal DVT. After a 3- to 6-month course of anticoagulant therapy, the risk of recurrent thromboembolism is lower in patients who have reversible risk factors. The recurrence rate is greater in patients with previous proximal vein thrombosis, compared with calf vein thrombosis. Following a 3-month course of anticoagulant therapy, secondary thrombosis risk is 2-4% in the first year. Recurrence risk is low if VTE is provoked by surgery and intermediate if related to a nonsurgical risk factor. However, the recurrence risk is high if unprovoked and in the setting of the patient with a disease-related risk factor.

Biography

Femi Ehizokhale Osho completed his studies from Federal Government College Kwali, Abuja, Nigeria, in 2003. He received a Diploma degree in Science Laboratory Technology at Delta State University Abraka and has a degree in Biochemistry at Olabisi Onabanjo University Ago-Iwoye, Ogun State Nigeria. He is presently attending All Saint Medical University, Saint Vincent and the Grenadines, (Caribbean) in his third year (7th semester) of his clinical training.

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