GLOBAL THROMBOSIS FORUM

GTF
Global Thrombosis Forum
(an affiliate of the North American Thrombosis Forum – NATF)
In partnership with NATF in Community Service from Thrombosis
(An associate Society of the International Union of Angiology)

NATF
North American Thrombosis Forum

Pulmonary Embolism Symposium:

Second Rajan Memorial Lecture

Sunday, January 9, 2022, 11:00am – 2:45pm EST

AGENDA

Comperes: Anushka Bhate and Krish Raina
11:00am Guest Arrival
11:30am Introduction Jawed Fareed, Ph.D. / Atul Laddu, MD, Ph.D.
11:35-11:55am Clinical challenges in the management of PE in younger population: Samuel Goldhaber, MD (Virtual)
12:00-12:45pm: Meet and greet Dr. Jawed Fareed: one on one with GTF students: Ms. Anushka Bhate, Mr. Ashay Bongirwar, Ms. Neha Koganti, Ms. Ria Chokshi, Mr. Rohan Pai, and the 5 elected Loyola interns 2022
12:45-1:45pm: Lunch

Pathophysiology of PE, diagnosis, risk stratification, and management

1:45pm Anushka Bhate: Pathogenesis of PE, risk stratification, and management
1:55pm Rohan Pai: Coagulation process, diagnosis of PE, and incidence of PE
2:05pm Ashay Bongirwar: Clinical management of PE and prophylaxis of PE
2:15pm Yoga, another option to manage the patients with VTE: Neha Koganti, Diya Pise, and Ria Chokshi
2:25pm COVID-19 and PE: Bulent Kantarcioglu, MD
2:40pm Concluding remarks by Dr. Jawed Fareed / Supriya Sawant

PRESENTATION ABSTRACTS

Samuel Goldhaber, MD: Clinical challenges in the management of PE in younger population.

Rajan Laddu was an extraordinary young man who packed a lot of living, goodness, and talent into his tragically foreshortened 25 years of life. Rajan is asking us to examine what we know and what we must learn about PE in young adults. Pay attention to the psychological impact of PE. We have new tools to treat massive PE. Paths for futures investigation of PE await our research and discovery.

Anushka Bhate: Pathogenesis of PE, risk stratification, and management.

Pulmonary embolism is a life-threatening condition when a clot gets dislodged, travels to the lungs, and blocks an artery in the lungs. Blockade of the pulmonary vessels leads to increased resistance that the right ventricle must pump blood against, resulting in an acute right heart failure, which is the primary cause of death in PE. Diagnosis of PE is by screening tests (Antithrombin III, protein C and S deficiency, PCR for factor V Leiden mutation and prothrombin G2021A mutation, testing for antiphospholipid antibodies and homocysteine level), routine coagulation panel, d-dimer, and ultrasound. Pulmonary Embolism Severity Index (PESI) and the simplified PESI (sPESI) are used as prognostic models. PE is managed using low molecular weight heparin, fondaparinux, IVC filter, or tPA, or by embolectomy.

Rohan Pai: Coagulation process, diagnosis of PE, and incidence of PE

The coagulation cascade is made up of several steps, immediately following an endothelial cell wall injury. A temporary platelet plug is formed, and using the intrinsic and extrinsic path, a final fibrin plug, which is the blood clot, is formed.

The diagnostic workup of PE includes arterial blood gas analysis, checking brain natriuretic peptide levels, checking troponin levels, D-dimer testing, electrocardiography, a chest radiograph, and computed tomographic pulmonary angiography. The Geneva Clinical Prediction Rule and the Wells Criteria are also used to find the risk level and probability for PE.

It is the third most common type of cardiovascular disease, following coronary artery disease and stroke. Just like DVT, PE occurs in more males than in females. The mortality rate is high, causing 100,000 deaths in the U.S. every year. The case fatality rates of PE have been decreasing, due to the improvement of diagnostic methods, the initiation of early intervention, and better medicine.

Ashay Bongirwar: Clinical management of PE and prophylaxis of PE

Pulmonary Embolism occurs when a thrombus (blood clot) breaks off and enters the pulmonary circulation, disrupting the blood flow in the pulmonary artery. Management of PE is divided into two stages: Initial Management and Long-term treatment and prevention of recurrence. Initial management of PE can further be divided into three: Supportive measures, Anticoagulation, and Reperfusion Strategies. Supportive measures are regarded as the very initial approach for tackling PE, and include giving supplemental oxygen, IV fluid resuscitation, vasopressors, and mechanical cardiopulmonary support devices. Anticoagulation is the mainstay of PE treatment. Low molecular weight heparin or unfractionated heparin are commonly administered. Direct Oral Anticoagulants as well as Vitamin K antagonists can also be used. Other modes such as thrombolysis, catheter-directed treatment, surgical embolectomy, vena cava filters, etc. may be required for more serious cases of PE. Long term prevention of recurrence is achieved for at least 3 months or more of anticoagulant treatment.

Neha Koganti, Diya Pise, and Ria Chokshi: Yoga, another option to manage the patients with VTE

Yoga, a practice that unites the body, mind, and soul, strengthens both the muscles and the mind, and promotes optimal cell health. Focusing the mind on the breath and energy, it creates a balanced system in the body, with

positive impacts on the body, including reducing the risk and mitigating the effects of VTE. We researched the specifics of how yoga and a plant-based diet can both prevent and manage VTE. Yoga helps reduce inflammation through reducing circulation of proinflammatory cytokines and through its positive effect on the parasympathetic system; it also helps manage varicose veins, another association of VTE. Yoga also helps reduce the effects of VTE through its effect on chronic pain as well as through its breathing aspect, known as pranayama. A plant-based diet helps prevent VTE since it provides many phytochemicals, which help prevent certain types of cancer (a cause of VTE). The anthocyanins that many naturally pigmented foods provide significantly reduce thrombus growth, which helps manage VTE. We conclude that Yoga and a plant-based diet achieve a deeper level of health and should be considered in the management of patients with PE.

Bulent Kantarcioglu, MD: COVID-19 and Pulmonary Embolism. Lessons from Pandemic

The coronavirus disease 2019 (COVID-19), caused by severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2), has become a global health problem. Previous studies have shown that patients with COVID-19 infection have an increased rate of thrombotic events including pulmonary embolism (PE). This has been attributed to pathophysiology of the COVID-19 infection and due to the unique features of coagulopathy that is observed in COVID-19 infected patients. Currently anticoagulant therapy is the only widely accepted method to prevent COVID-19 related thrombotic events by international guidance. However, anticoagulant therapy can be challenging, with major bleeding complications due to hemostatic changes that is observed in COVID-19 infection. For this reason, patient-centered, individual based decision making should be applied in thrombosis treatment and thromboprophylaxis of COVID-19 patients.

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