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**Abstract**  
**BILATERAL LOWER LIMBS SUPERFICIAL THROMBOPHLEBITIS IN YOUNG PATIENTS WITH COVID-19 INFECTION**

Dr. Sunita Kumbhalkar, Dr. Bharatsingh Rathod, Dr. Rajashree Khot.

**Background:** The role of obstructive vasculopathy has been an essential topic of discussion in the pathogenesis of COVID-19. Though the literature suggests that COVID-19 provokes arterial and venous thrombotic events, exact mechanism is still unknown, probably driven by distinct but as yet uncertain process. Limited data is available on the incidence of superficial vein thrombophlebitis (SVT) in patients with Covid 19 infection. Venous thromboembolism (VTE) in COVID 19 can be found in all hospital patients, regardless of severity of pneumonia, degree of respiratory failure, age and any comorbidities or risk factors. The timing of onset of venous thromboembolism (VTE) is variable, ranging from the first day of hospitalization to fifth week although early onset seems slightly more frequent. We describe two young cases less than 40 years of age with bilateral lower limb superficial thrombophlebitis, one isolated and other associated with pulmonary and arterial thrombosis having multi systemic involvement with confirmed COVID 19 infection. There was no history of any prior comorbidities or other risk factors for venous and arterial thromboembolism.

**CASE HISTORY**

**Case 1:** 34 year male presented with oral ulcers, pain, swelling and redness of both lower limbs and dry cough for two days. On examination there was patchy discoloration of both lower limbs with edema. Bilateral lower limb venous doppler showed complete thrombosis of left great saphenous vein for entire length in leg and complete thrombosis of right great saphenous vein for entire length in leg, suggestive of SVT. Investigations showed NLR > 3.5, CRP 53.75 m/l and D-dimer 1160 ng/ml. His serum ANA, Beta 2 glycoprotein IgG, IgM were normal. CT thorax revealed few nodular opacities. CT abdomen was normal. He was treated with LMWH and tablet dabigatran on follow up.

**Case 2:** 32 year female presented with history of right hemiparesis with no history of dry cough, diarrhea, consumption of oral contraceptives. On examination, right upper limb pulsations were absent with tachycardia and signs of hemiparesis on right side. During hospital stay she developed bilateral lower limb edema. Investigations on admission showed Hb 11.2gm%, CRP 17.9mg/L, NLR > 3.5, D-dimer 2247 ng/ml and IL-6- 63.89 pg/ml. Serum ANA, antiphospholipid antibody, homocysteine, lipid profile were normal. MRI brain with angiography showed evidence of acute lacunar infarct in right parietal subcortical white matter, left thalamus with normal angiographic study. Chest X-ray showed bilateral upper zone patchy consolidation. Bilateral upper limb arterial doppler revealed thrombosis in right ulnar artery. Bilateral lower limb venous doppler showed acute thrombosis in right distal superficial femoral vein extending to popliteal vein and thrombosis in left popliteal vein with partial thrombosis of right great saphenous vein. She was treated with anticoagulant and supportive care. Post discharge her pulmonary angiography showed partial acute thrombosis in main and right pulmonary artery. CT aortogram revealed hypodensities in spleen and right kidney suggestive of infarcts due to microemboli. She was detected sickle cell trait on post discharge follow up. Both patients were managed conservatively with good recovery on follow up.

**Discussion:** The possible mechanisms of venous thrombosis in COVID-19 infection may include the fact that virus attacks the human body via the angiotensin converting enzyme receptor which is found in blood vessels and ultimately causes cytokine storm including IL2, IL7, IL10, G-CSF, MCP1 and TNF alpha which increase the risk of clotting complication. There are few cases of superficial thrombophlebitis in literature. Negin Hesam-Shariati et al (2021) reported case of greater saphenous vein thrombosis after three days of hospitalization in COVID-19 patient with respiratory symptom. Here we reported one male patient with bilateral lower limb SVT without arterial thrombosis and DVT and second female patient with bilateral lower limb SVT with arterial and pulmonary artery thrombosis. Both patients were managed with guideline directed treatment and NOAC on discharge with a good clinical recovery on follow up.

**Conclusion:** Venous thromboembolism in COVID-19 infection can be found regardless of severity of respiratory symptoms, age, prior comorbidities and risk factors. A duplex ultrasound screening program should be advised in all suspected thrombosis in confirmed COVID-19 infection in hospitalized patients. Close follow up of superficial vein thrombophlebitis should be done to prevent further propagation to deep vein thrombosis and for early and proper management to avoid complications.

**Abstract**  
**PULMONARY EMBOLISM IN COVID 19 PATIENTS ADMITTED WITH ACUTE CORONARY SYNDROME: A CASE SERIES.**

Dr. Ratul Ghosh, Dr. Biswajit Majumder, Dr. Shibsankar Sarkar.

**Background:** Starting from December 2019 till date COVID-19 pandemic has affected around 570 million patients worldwide. It affects cardiovascular system in many ways. Many studies have been performed around the world to assess incidence of pulmonary embolism in covid 19 positive patients.

**Method:** 6 patients during the period 1st December 2021 to 31st January 2022 admitted with Acute Coronary Syndromes, found Covid 19 positive, during the course of the treatment developed pulmonary embolism. They were evaluated clinically & radiologically. They were treated and discharged with follow up.

**Results:** All six patients were diagnosed COVID 19 positive on next day of admission. All of them had mild fever. First patient was 35 years old male admitted with anterior wall AMI. On sixth day of admission he developed sudden onset shortness of breath without chest pain. HRCT chest and echocardiography showed pulmonary embolism. Second patient was 60 years old female patient admitted with NSTEMI. She was discharged after 10 days of admission. On 11th day she returned with painful swelling of left leg along with dyspnea. CT pulmonary angiography showed pulmonary embolism. Third patient 70 years old male admitted with inferior wall AMI developed sudden onset hypotension on eighth day of admission. Echocardiography showed thrombus in main pulmonary trunk and right pulmonary artery along with flattening of IVS. Fourth patient, 56 years old male patient admitted with NSTEMI developed dyspnea on seventh day of admission. HRCT chest and echocardiography showing thrombus in right atrium confirmed pulmonary embolism. Fifth patient, 49 years old male patient admitted with inferior wall AMI developed dyspnea on 10th day of admission along with swelling of right leg. Echocardiography showed thrombus in IVC extending into right atrium with Doppler scanning of leg showed DVT. Sixth patient 65 years old male patient admitted with NSTEMI developed dyspnea, hypotension on 9th day of admission. He also had painful swelling of right leg developed same day. Echocardiography demonstrating thrombus in main pulmonary trunk. Doppler scanning of leg confirmed DVT with PE. With subsequent treatment they all recovered and discharged in stable condition.

**Conclusion:** All the patients while recovering from acute coronary syn- drome developed sudden deterioration of symptoms and diagnosed to have pulmonary embolism some of them even while on anticoagulants. A high index of suspicion helped to identify the etiology and initiation of prompt treatment.
Abstract – 140

THE INCIDENCE OF THROMBOTIC EVENTS AND ITS IMPACT ON CLINICAL OUTCOME IN PATIENTS WITH COVID 19 INFECTION

Dr. Bhoj Raj Sharma, Dr. Shibba Takkar Chhabra, Dr. Gurbhej Singh.

Background: Corona virus disease-2019 (COVID–19) infections significantly increase thrombosis, which increases mortality. The purpose of this study is to estimate the incidence of thrombotic events (TE) and their impact on clinical outcomes in COVID-19 patients who are hospitalized.

Methods: This was a cross-sectional study that was analytical. COVID-19 patients hospitalized with the disease comprised the study population. The clinic demographic data, thrombotic events and clinical outcomes were collected from electronic health records.

Results: The study comprised of total of 1274 patients. The median age of the study population was 56 years (IQR:44-66 years). The estimated prevalence of TE was 5.8%(n=74); 60.8% of these TE occurred in patients in the intensive care unit. Venous events(3.9%) were common compared to arterial events(1.9%).Total leukocyte count, C-reactive protein, and D-dimer level were found to be the independent predictors of having TE by using multivariate logistic regression analysis. Receiver operator curve revealed a cut-off point of 872.5 DDU m using multivariate logistic regression analysis. Receiver operator curve dimer level were found to be the independent predictors of having TE by arterial events(1.9%).

Conclusion: Thrombotic complications are common in hospitalized COVID-19 patients, and it is more common in individuals with severe/critical COVID disease. According to studies, persons who have thrombotic complications are twice as likely to die than those who don’t have thrombotic complications.

Abstract – 141

THE PROGNOSTIC VALUE OF TIME FROM SYMPTOMS ONSET TO THROMBOLYSIS IN PATIENTS WITH PULMONARY EMBOLISM

Dr. Manikandan Murugan Vairaperumal, Dr. Nambirajan Jeyapalan.

Objective: In clinical practice guidelines states thrombolysis can be administered during the 14 days after beginning of symptoms in PE (Pulmonary embolism). However, the role of the early thrombolysis in PE has not been comprehensively evaluated. In this study we evaluated the effect of short symptom to thrombolysis time (STT) in these patients who received the thrombolytic therapy within the 48 hrs.

Method: A total of 50 patients with PE who underwent thrombolytic therapy in Coimbatore medical college emergency and ICCU (Intensive cardiac care unit) during a period of 1 year march 2021 -march 2022 were included in this study. The patients were stratified into two groups according to STT as < 48 hrs. as group 1 and >48 hrs. patients into group 2. In hospital events and long-term mortality were compared between the 2 groups.

Result: Group 2 had higher incidence of hospital mortality, acute kidney injury, cardiogenic shock, asystole, and the use of mechanical ventilation. The survival rate in group 1 (80%) is better than group 2 (50%). According to this study a STT > 48 hrs. independently associated with in hospital and long-term mortality.

Conclusion: A short STT has a great importance in patients with PE who treated with thrombolytic therapy. The efficacy of systemic thrombolysis significantly drops after 24 hrs. Because of this, the period between the symptoms onset and thrombolytic therapy should be kept short as much as possible.

Table 43
Table summarising all six patients

| Patient | Age | Sex | Initial presentation | Deterioration on day | Diagnosed by | outcome |
|---------|-----|-----|---------------------|---------------------|--------------|---------|
| 1       | 35yrs | Male | Anterior wall AMI   | 6th day of admission| HRCT chest and echocardiography | Recovered and discharged |
| 2       | 60yrs | Female | NSTEMI             | 11th day from diagnosis | CT pulmonary angiography | Recovered and discharged |
| 3       | 70yrs | Male | Inferior wall AMI  | 8th day of admission | echocardiography | Recovered and discharged |
| 4       | 56yrs | Male | NSTEMI             | 7th day of admission | HRCT chest and echocardiography | Recovered and discharged |
| 5       | 49yrs | Male | Inferior wall AMI  | 10th day of admission | echocardiography | Recovered and discharged |
| 6       | 65yrs | Male | NSTEMI             | 9th day of admission | echocardiography | Recovered and discharged |

Abstract – 142

INDIAN RECOMMENDATIONS ON ANTITHROMBOTIC MANAGEMENT FOR CHRONIC CORONARY SYNDROME: AN EXPERT CONSENSUS DELPHI STUDY

Dr. Kamal Sharma, Dr. Jay Shah, Dr. Prakash Hazra.

Background: The unique characteristics of Indian patients with Chronic Coronary Syndrome (CCS) demand consensus for antithrombotics in CCS.

Method: Three round Delphi study were conducted using a virtual online digital connect approach with 20 key opinion leaders (ROVR Study Group) in cardiology with a cumulative experience of 550 man-years of experience across different specialties. The recent Asia Pacific consensus recommendations were the benchmark to draw a consensus based on an online mapping followed by a discussion based on the statements and a repeat pool during the virtual meeting. A consensus was defined if more than 75% of the experts endorsed the statement.

Results: The mean number of statements that were for agreed-stringently agreed was 12 (± 1, 95% CI 12 to 13). Of 13 questions, five were unanimously (100%) rated consistently with the agreement-strong agreement and six received a unanimous response, at least in one of the three rounds of the poll, p<0.72 (NS). The mean man-years of experience of respondents were 27 years (± 27, 95% CI 21 to 34). There was a unanimous consensus, with absolute agreement consistently for drug-eluting stents should be preferred for PCI, bleeding and thrombotic risk should determine the choice of antithrombotic regimen, and single antplatelet therapy is suited for low ischaemic risk or excessive bleeding risk. Dual pathway inhibition therapy (aspirin with rivaroxaban) is recommended for Indian CCS patients with high thrombotic risk and without high bleeding risk.

Conclusion: The statements for use of antithrombotics in CCS as a reflection of the contemporary evidence apply to current clinical practice in India.