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Prophylactic anticoagulant therapy for reducing the risk of stroke and other thrombotic events in COVID-19 patients



The first confirmed case of COVID-19 in Taiwan¹ had sore throat, dry cough, fatigue and low-grade fever as the first symptoms. However, more atypical syndromes have been reported in the patients with COVID-19, such as headache, cerebral hemorrhage and cerebral infarction². There have been some news and information about the thrombotic complications of COVID-19.

A study by Lodigiani et al.³ on the effects of arterial and venous thromboembolic complications of COVID-19, including Venous Thromboembolism (VTE), Ischemic Stroke, Acute Coronary Syndrome (ACS), and MI, was performed in the affected patients in a hospital in Milan, Italy. The study was performed on 388 patients. It was found that thromboembolic events occurred in 28 patients (21%), half of whom were diagnosed in the first 24 h of hospitalization. 44 patients underwent VTE imaging, which was confirmed in 16 patients (36%). Computed tomography pulmonary angiogram (CTPA) was performed in 30 subjects (7.7% of total cases), in which pulmonary embolism was confirmed in 10 subjects (33% of CTPA subjects). Both Ischemic Stroke and ACS/MI were observed in 2.5% and 1.1% of patients, respectively. Overt Diffuse Intravascular Coagulation (DIC) was observed in 8 patients (2.2%). It was concluded that due to the high number of arterial and especially venous thromboembolic events in hospitalized patients, especially in the first 24 h of admission, as well as the high number of positive VTE cases in imaging, They urgently stated the needs to improve VTE diagnostic strategies and thromboembolic events and also consider thromboprophylaxis in patients with COVID-19. And discuss the in patients with COVID-19.

Oxley et al.⁴ recently reported five cases of large-vessel stroke in patients which were positive for COVID-19. All of them were younger than 50 years old. Suggesting that the COVID-19 might be the cause. In another study Ling et al. in a case series of 214 COVID-19 patients found neurologic symptoms in 36.4% of patients. These symptoms were more

common in patients with severe infection (45.5%) according to their respiratory status. Symptoms were impaired consciousness, acute cerebrovascular events and muscle injury.

Based on the information provided from Iran's Ministry of Health⁵, patients with COVID-19 are more likely to have thromboembolic events. The use of prophylaxis with Enoxaparin or Heparin in severe cases of COVID-19 or in patients with D-dimer level more than six times of normal levels has been reported to reduce mortality. So, in Iran, according to the recent version of guidelines published by the Iran's Ministry of Health, prescription of anticoagulants in patients with COVID-19 is considered as follows: 1. in all patients admitted to the hospital with a diagnosis of COVID-19, prophylaxis with Enoxaparin at a dose of 40 mg daily subcutaneously or heparin at a dose of 5000 units subcutaneous twice daily or three times daily is recommended. 2. In patients who are prohibited from taking anticoagulants, the use of mechanical prophylactic methods such as compressive stocking is recommended.

Declaration of Competing Interest

The authors have no conflicts of interest relevant to this article.

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