

Malnutrition and venous thromboembolism are specific issues in elderly patients with coronavirus disease 2019

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TO THE EDITOR

Elderly population are more susceptible to coronavirus disease 2019 (COVID-19) and more likely to develop into severe cases after infection. Attention is usually paid to co-infection and multiple comorbidities in their clinical courses, but other important issues may sometimes be ignored. We specially address here the risk of venous thromboembolism and malnutrition in elderly COVID-19 patients according to our experience in the treatment of an 82-year-old female case.

The patient was referred to Wuhan General Hospital because of fever (38.8°C), dry cough, and chest distress on February 7, 2020 (day 1). Chest computerized tomography scan showed bilateral subsegmental opacities, patchy consolidation, and enlarged mediastinal lymph nodes. Arbidol hydrochloride (0.2 g, three times a day), moxifloxacin (0.4 g, once a day), and sulperazone (cefoperazone 1.0 g and sulbactam 0.5 g, twice a day) were administrated, and noninvasive ventilator was applied. Because of her poor nutritional status (NRS2002 score = 5), intact protein enteral nutrition powder was added to her regimen. Her fever persisted from day 2 to day 3 with the highest temperature of 39.0°C, and the level of albumin decreased continuously (24.2 g/L on day 3). A supplement of albumin was given intravenously on day 4 (35 g) and day 7 (20 g). Her temperature has been controlled under 37°C since day

10, and chest radiology on day 15 indicated the alleviation of pulmonary infiltration. Negative results were shown in the viral nucleic acid detections on day 14 and day 16, and she was discharged on day 17. Notably, during her hospitalization, D-dimer level increased significantly to 6.35 µg/mL on day 6. She did not present the symptom of dyspnea. Pulmonary embolism was excluded by computed tomography pulmonary angiography (CTPA), but ultrasonographic examination showed thromboembolism in bilateral gastrocnemius veins. Low-molecular-weight heparin (4000 IU, twice a day) was subsequently put on her regimen, and her D-dimer level reduced to 1.01 µg/mL on day 16. Rivaroxaban was suggested to take for 3 months after discharge with the routine examination of coagulation indicators.

Nutritional status is easily undermined after the infection of SARS-CoV-2 due to the impaired appetite, the consumption of protein in immune response, and the impact of virus on gastrointestinal tract.^[1] Elderly patients with COVID-19 are more susceptible to malnutrition because of age-related muscle loss, chewing problem, and psychosocial disadvantages,^[2] which compromises immunocompetence and leads to their longer hospital stay as well as increased disease severity.^[3] On the other hand, hypoxia, inflammatory, and procoagulant state, as well as venous stasis caused by immobility, contribute to the development of venous thromboembolism (VTE) in COVID-19.^[4] Besides, advanced

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age is an intrinsic risk factor for VTE,^[5] which suggests an even higher incidence of thrombosis complications in elderly patients. However, many VTE cases in COVID-19 are asymptomatic,^[5] and the complex clinical courses of elderly patients may further lead to the underestimation of this condition; therefore, monitoring VTE in their treatment with D-dimer, ultrasonography, and CTPA is indispensable. In conclusion, malnutrition and VTE are prevalent but easily underestimated in elderly patients with COVID-19. Special attention should be paid to these issues in clinical practice, and further studies are required to determine the precise screening and tailored intervention approaches for malnutrition and VTE, especially in elderly patients.

Conflict of Interest

Wei Wang is an Associate Editor-in-Chief of the journal. This article was subject to the journal's standard procedures, with peer review handled independently of this editor and his research groups.

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