

Reducing the Risk of Venous Thrombosis During Self-Isolation and COVID-19 Pandemic for Patients With Cancer: Focus on Home Exercises Prescription

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Introduction

Venous thromboembolism (VTE) is a frequent complication of cancer. The incidence of clinically overt VTE has been reported to be 10% with even higher rates in postmortem studies. Risk factors of VTE in patients with cancer include tumor-specific factors (ie, tissue factor such as microparticles), anatomic factors (ie hepatocellular cancer and venous invasion), patient-specific factors (ie, prior VTE, age, obesity, and thrombophilia), and treatment-related factors (ie, high-risk surgery, chemotherapeutic agents). Although several studies have attempted to predict the risk of VTE in patients with malignancy, Khorana score has been favored internationally for its simplicity and strength.¹ During COVID-19 pandemic, absolute home isolation has been recommended for all patients with cancer, which will bring an extra risk for thrombosis, inactivity for old patients.

Discussion

As a general notification, patients should be warned to be active as much as possible since there is an obvious relation between limb immobilization and VTE. However, the intensity of the exercise has been demonstrated to be essential, strenuous exercise (ie, ≥ 3 h/wk) has been related to increased risk of VTE in elderly and obese patients.² Patients with cancer may perform moderate intensity aerobic exercises, which cause them lightly to perspire, such as brisk walking, dancing, cycling for 30 minutes 5 times per week, with an extra care for negative side effects including shortness of breath, nausea, or dizziness.

The most commonly used mechanical methods to prevent the development of deep venous thrombosis and reduce the risk of pulmonary embolism are calf pump exercises. These exercises are safe, feasible even for elderly and bed-dependent patients with cancer. Recent studies have demonstrated that

active ankle dorsiflexion, plantar flexion, subtalar inversion, and eversion exercises increase venous return in the lower extremity, which suggest that combination of these exercises will be effective to reduce and even prevent the stasis and so forth, VTE.³ Likewise, the application of deep breathing exercises along with ankle exercises is suggested to contribute to venous return in the lower extremity.⁴ According to the American Society of Hematology 2019 guidelines for management of VTE, it is appropriate to use compression stocks in acutely or critically ill patients, who are not appropriate for anticoagulant prophylaxis because of bleeding risk. Also, it is convenient for patients who travel long distance and have high risk for VTE. However, using of compression stocks in VTE prophylaxis is not recommended in outpatients with minor VTE risk factors.⁵

Another important issue is that the necessity of primary thromboprophylaxis should not be neglected, unless there is a contraindication in high-risk selected patients with cancer, considering the Khorana score. Apixaban, rivaroxaban, or Low molecular weight (LMWH) thromboprophylaxis should be initiated in accordance with the current guidance recommendations of the International Society on Thrombosis and Haemostasis and the American Society of Clinical Oncologists.^{1,2} Patients should be informed about the risk of bleeding, drug use, and side effects. For these reasons, communication

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with patients should be continued online or by telephone in pandemic, at home isolation.

Conclusion

In conclusion, we recommend all caregivers to include a reasonable yet effective prescription of home exercise for all patients with malignancies.

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