




Improving Care of Older Patients with Hemophilia During COVID-19 Pandemic, Reducing the Risk of Venous Thrombosis with Home Exercises

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To the Editor:

As factor replacement has been the standard of care for congenital Hemophilia A and B, life expectancy has risen above 70 years and the incidence of aged hemophilia patients is increasing. For example, in Italy, nearly 8% of persons with severe hemophilia A or B are 65 years old or older. This brings further challenges to care of hemophilia patients, problems of adulthood and aging including atherosclerosis and venous thromboembolism.¹ Thromboembolism is reported to be more frequently during factor application periods. Besides the iatrogenic increase of factor VIII, nonfactor treatments including emicizumab, concizumab and fitusuran are regarded as even more risky in terms of thromboembolism.²

Social isolation and working from home are imperative measures during Covid-19 pandemic. During this period, risk of thromboembolism may certainly increase with immobilization. To improve the care of older hemophilia patients, we would like to draw attention to hemophilia caregivers and make simple suggestions to prevent venous thromboembolism as well as muscle preservation.

First of all, factor replacement shall be recommended before exercise or exercise shall be carried out soon after factor replacement. Generally, it is aimed to keep the factor level above 0.01 IU/mL (1%) with prophylaxis replacement therapy to prevent bleeding and joint damage. However, according to recently published expert opinion, the minimum and ideal factor levels required, increase in patients with and without joint morbidity as physical activity level increases and consequently the acceptable factor level of 1% is insufficient.³ Therefore, home exercise program should be organized individually, taking into intensity of the exercise and the patient's factor level.

Physical activity and exercise are considered as an important component of a comprehensive hemophilia treatment. In recent studies, isometric, resistance, proprioceptive and aerobic

exercises have been shown to be effective and safe (7). Moderate intensity aerobic exercise such as brisk walking, cycling or slow dancing at 50–70% of estimated maximal heart rate (220-age) could be performed three times per week for 30 minutes. The intensity of the exercise should be at a level that the patient can speak, but not feel breathless.⁴

In addition, calf pumping exercises involving ankle plantar flexion, dorsiflexion, subtalar eversion and inversion combined with deep breathing have been shown to increase venous return in the lower extremity. Calf pump exercises should be started at low intensity and implemented within the limits of pain. Activities that involve joint hyperextension and torsional stresses should be avoided. The presence of a target joint may limit the extend of the exercises. Patients may be recommended to use a brace or splint for target joint during physical activity.^{4,5}

To simplify the suggestion of exercise, frequency, intensity, time per session and type of exercise shall be addressed individually. For example, an exercise prescription for an adult hemophilia patient without an active bleeding or target joint may be as;⁵

Aerobic exercise:

Type: Brisk walking

Frequency: 3 times weekly

Intensity: can speak but not feel breathless

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Duration: 30 minutes (in one session or in multiple sessions of ≥ 10 minutes)

Strength and proprioceptive exercise:

Type: Calf pump exercise (ankle plantar flexion, dorsiflexion, subtalar eversion and inversion) combined deep breathing (breathing in slowly and deeply through the nose and breathing out through the mouth), half-squat on both legs, elbow flexion and extension with free weights (light weights such as 0.5 or 1 kilogram)

Frequency: 2 times weekly

Intensity: within the limits of pain and a comfortable range of motion

Repetitions: 6–10 repetitions for 3–4 sets, with 2–4 min rest between sets

Patients should be informed about ending exercise, resting, elevation the limb and ice treatment that could be used, if they have pain, swelling and tenderness in their muscles or joints during exercises.

While exercising, it should be done without creating a predisposition to bleeding, and if necessary, prophylactic factor replacement should be done by increasing the frequency of administration rather than increasing the dose per administration. Especially during this pandemic, we believe that maintaining a stable level of factor VIII not only to prevent bleeding but also to prevent abrupt increases of factor level that may cause thrombosis is crucial. For this reason, more frequent but lower levels of factor replacement may be wise. This might be mentored with good and close contact with the patient. Keeping in touch online or offline is also very important in terms of the emotions and perceptions they may experience during this new period. Patients may request to be self-assured with a follow-up doctor for both problems that may occur in isolation at home and supply of drug.⁶

Last of all, general health suggestions including proper nutrition, adequate sleep, active rest and stress management shall be repeated to decrease the risk of thromboembolism.


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