NATIONAL HEMOPHILIA FOUNDATION

for all bleeding disorders

MASAC Document #242

MASAC RECOMMENDATIONS REGARDING DOSES OF CLOTTING FACTOR CONCENTRATE IN THE HOME

The following recommendation was approved by the Medical and Scientific Advisory Council (MASAC) on June 2, 2016, and adopted by the NHF Board of Directors on June 7, 2016.

Individuals with hemophilia and other bleeding disorders require prompt treatment of bleeding episodes. Bleeding episodes can occur at any time and are often unpredictable; bleeding events may be spontaneous or may occur after minor or major injury or trauma. Prophylaxis treatment regimens are designed to minimize bleeding events, yet patients on prophylaxis can experience unexpected bleeding episodes.

Bleeding episodes are treated with one or more intravenous infusions of clotting factor concentrate (CFC). If the patient or caregiver has been trained in home infusion of CFC, then a bleed may be handled at home with telephone input from the Hemophilia Treatment Center (HTC). Minor bleeding episodes can usually be treated with a few doses of CFC. More serious bleeding episodes may require multiple doses of CFC over several days to resolve. However, if the bleed is major or potentially life- or limb-threatening, then the patient may need to be seen in the HTC or an Emergency Department (ED) for evaluation and treatment and possible hospitalization.

Patients on home therapy receive regular shipments of CFC from their pharmacy providers, often on a monthly basis or as home supplies are depleted. Having an adequate supply of CFC at home to allow treatment over weekends and holidays, and to account for needs related to unexpected bleeding events, is critical to achieve safe patient care. Moreover, natural disasters (hurricanes, tornadoes, floods, earthquakes) may occur, resulting in patients being cut off from delivery of CFCs for several days. During these periods of time, the need to continue regular care regimens, including prophylactic treatment and treatment of breakthrough bleeding episodes, requires continued access to an adequate supply of CFC to assure immediate treatment. Lack of an adequate supply of CFC to cover such situations might place patients at-risk for severe complications, including death.

The number of doses required for provision of home therapy varies greatly and is dependent upon the type of hemophilia (FVIII, FIX), the level of severity (severe, moderate, mild), the presence of an inhibitor, the prescribed regimen (on-demand, prophylaxis, immune tolerance), the number of bleeding episodes experienced regardless of the prescribed regimen, individual pharmacokinetics, the product utilized (standard half-life versus longer lasting products), and the level of physical activity. Therefore, a monthly supply may range from 15 doses in patients with

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FVIII deficiency on every other day prophylaxis using a standard half-life product to 2-4 doses for patients with FIX deficiency on prophylaxis with a longer-lasting product.

In addition, the number of doses available for patients treated either on-demand or with a prophylactic regimen must take into account the number of breakthrough bleeding events anticipated based on number of such bleeds in the past. For those on prophylaxis, a minimum of one major dose[1] and two minor doses[2] should be available in addition to the prophylactic doses utilized monthly. For patients with severe or moderate hemophilia treated on-demand, the number of doses required to be available at home may be based upon historical bleeding patterns, with at least one major and two minor doses added to assure a level of safety.

Patients with inhibitors treated with bypassing agents, those on Immune Tolerance Induction (ITI), and those with more than one bleeding disorder (e.g. hemophilia and von Willebrand Disease) may require more than one product at home (e.g. one for ITI plus a bypassing agent for treatment of bleeding) and therefore will need a greater number of doses on hand. The number of units per kilogram prescribed and the number of doses for each product is based upon the product used, the type of bleeding event, the prescribed regimen, and the patient's bleeding pattern. Required doses may range from 15-60 per month for ITI (e.g. every other day versus twice daily) plus a minimum of a three-day supply of bypassing therapy for treatment of acute bleeds based upon the prescribed product and regimen.

For all patients, the treating physician is best able to determine the number of doses required for each patient based upon their diagnosis, co-morbidities, clinical circumstances, product(s) utilized, and historical bleeding patterns.

Therefore, MASAC makes the following recommendations:

1. Patients on home therapy should be able to obtain a prescription refill of their CFC when their home quantity reaches at a minimum an estimated one week's supply. This allows for treatment of an unexpected bleeding episode or other emergency event while waiting for delivery. The doses remaining at home should not be deducted from the doses to be dispensed for the next delivery.
2. Patients who infrequently infuse also require doses available at home to allow for safe patient care; this will provide for care in an emergency, as local healthcare facilities cannot be relied upon to stock the appropriate replacement products for these patients.
3. Patients treated on-demand should be allowed monthly dispensations of CFC reflective of their bleeding history.
4. Patients treated on prophylaxis require extra doses (minimum one major, two minor) at home to treat breakthrough bleeding episodes. These doses should not be subtracted from the calculated monthly doses designated for prophylaxis and should be replaced as utilized.
5. Patients and family members are encouraged to track expiration dates of CFC on a monthly basis. Doses that are about to expire should be utilized first to prevent waste.

Footnotes

[1] **Major Dose** is defined as a correction of clotting factor that achieves a level of 60-100+% clotting factor activity that is utilized to treat a bleeding episode that is deemed to require a higher hemostatic level such as occurs when bleeds occur in a target joint, or joint/area with a risk of significant sequelae (e.g. hip, head, potential for compartment syndrome, GI bleeding etc.). Bleeding episodes that are deemed to require a major dose commonly require follow-up infusions and doses to maintain hemostasis and allow healing. Therefore major doses are often followed by follow-up corrections, either major or minor dependent upon the patient circumstances.

[2] **Minor Dose** is defined as a correction of clotting factor that achieves a level of 30-60% clotting factor activity that is utilized to treat a bleeding episode that is deemed early, in a non-critical area and treatable with a lower hemostatic level. Such bleeds include early non-major joints, small muscle bleeds, and skin/soft tissue etc.

Reference

1. Medical and Scientific Advisory Committee. MASAC recommendation regarding home factor supply for emergency preparedness for patients with hemophilia and other bleeding disorders. MASAC Document #227. National Hemophilia Foundation 2014.

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