



NATIONAL HEMOPHILIA FOUNDATION
for all bleeding disorders

MASAC Document #233

**MASAC RECOMMENDATION ON ADMINISTRATION OF INHIBITOR
BYPASSING AGENTS IN THE HOME FOR PATIENTS WITH
HEMOPHILIA AND INHIBITORS**

The document was approved by the Medical and Scientific Advisory Council (MASAC) on April 18-19, 2015, and adopted by the NHF Board of Directors on June 4, 2015.

Patients with hemophilia A (factor VIII deficiency) and hemophilia B (factor IX deficiency) have frequent bleeding episodes that can be treated or prevented by infusion of the missing clotting factor (factor VIII or factor IX, respectively). The most serious adverse event for patients with hemophilia A or B is the development of inhibitors, which are antibodies that neutralize infused factor VIII or factor IX so that the factor concentrate cannot stop the bleeding. This can lead to serious, even fatal bleeding episodes.

Data have shown that hemophilia patients with inhibitors have better outcomes when they are treated with factor concentrate products in the home (home therapy). (1-6) Patients with hemophilia and inhibitors receive coordinated care from their regional Hemophilia Treatment Center (HTC). HTC physicians and nurses are trained to teach patients and family members how to mix and administer factor concentrates, including inhibitor bypassing agents, in a sterile manner. HTC staff also teach patients and family members about signs of potential reactions to these products and whom to call for any questions. Patients and family members are also instructed under which circumstances they should call the HTC immediately for advice regarding symptoms of serious bleeding episodes or management of a particular injury.

Patients with hemophilia and inhibitors may be managed with Immune Tolerance Induction (ITI), a process in which a concentrate of the missing clotting factor is given daily in the home to eradicate the inhibitor. (1) This procedure may take up to three years or more to eliminate the inhibitor and restore normal response to infused clotting factor. During this time, however, bleeding episodes can still occur that are not stopped by infusing the missing clotting factor. Thus, these patients need to receive an inhibitor bypassing agent (FEIBA, NovoSevenRT) to treat or prevent bleeding.

FEIBA is a plasma-derived concentrate of activated clotting factors that can sometimes be effective in stopping or preventing bleeding in inhibitor patients. It is stored in the refrigerator and given at 6-12-hour intervals. However, because it is a plasma-derived product, it contains other plasma proteins to which patients may develop allergic reactions, including rash, itching, hives, and anaphylaxis.

NovoSevenRT is a recombinant activated factor VIIa (rFVIIa) concentrate that has been shown in clinical trials to be effective in treating and preventing bleeds in patients with hemophilia and inhibitors. (2-3) rFVIIa is a clotting factor molecule that bypasses the factor VIII or factor IX inhibitor, allowing the blood to clot. NovoSeven is administered intravenously every 2 hours until the bleeding has stopped and then every 3-6 hours until healing is complete. It may be stored in the refrigerator or at room temperature, making it suitable for use in the home. (2-4) Because it is not made from human plasma, patients usually do not develop severe allergic reactions to it.

Patients with hemophilia and inhibitors can have life-threatening bleeding episodes that need to be treated within 1-3 hours, however many patients live more than 3 hours from their hemophilia care providers. Home administration of these inhibitor bypassing agents facilitates speedy treatment in the event of a bleeding episode or trauma. Moreover, in-home administration of clotting factor concentrates allows patients to adhere to a prophylaxis treatment regimen in which factor is given on a regular schedule to prevent bleeding. (5-6) Good adherence to prophylaxis plus speedy treatment of trauma and bleeding episodes will optimize outcomes for these patients by preventing serious joint damage or, in the case of limb or head trauma, permanent morbidity or mortality. Thus being able to infuse inhibitor bypassing agents in the home may be life- and limb-saving.

Therefore MASAC recommends that

1. Patients with hemophilia and inhibitors should be prescribed inhibitor bypassing agents to be administered in the home to treat or prevent bleeds.
2. Patients with hemophilia and inhibitors and/or their family members should be instructed in how to mix and administer inhibitor bypassing agents in a sterile manner in the home.
3. Patients with hemophilia and inhibitors and/or their family members should be educated about signs and symptoms of serious bleeding episodes and when to call their HTC care providers.
4. Patients with hemophilia and inhibitors and/or their family members should be given emergency contact numbers for HTC staff during regular hours and for 24-hour emergency on-call staff after hours.

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