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Cryoprecipitate Use Still Current in Hemophiliac Patients in the Congo

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Abstract

Hemophiliac factor concentrates due to their high cost are not accessible for the population in low resource countries, therefore; cryoprecipitate remains the main replacement offer to hemophiliac population to control bleeding episodes.

Keywords: Cryoprecipitate; Hemophilia A; Congo

Introduction

Replacement therapies such a FVIII and FIX concentrates are the safest and efficient treatment used in hemophiliac population in western countries [1]. In developing countries such treatment remains unavailable [1]. Instead, cryoprecipitate and frozen plasma are still currently offered to hemophiliac population despite the probability of transmissible viruses such as Human deficiency (HIV), hepatitis virus B and C (HBV, HCV) [1]. We report the case of two patients with severe hemophilia A for whom bleeding was controlled with cryoprecipitate.

The first patient is a 48 years old male diagnosed with sever hemophilia A during his childhood. In May 2015, he underwent in France right hip arthroplasty. The patient reported the use of Factor VIII recombinant for the surgical procedure. There was no abnormal bleeding during and after the procedure. After one year of follow up in France, the patient came back in the Congo in 2016. In May 2017, he presented to the hematology department of the university hospital for acute pain in the left thigh. Physical exam revealed a normal blood pressure but a sinus tachycardia. The left thigh was voluminous, warm and painful and lead to the diagnosis of a voluminous hematoma. Count blood cell showed a hemoglobin rate at 8.1g/dL with a hematocrit of 25%. The activated cephalin time (ACT) was elongated at 72sec (control 26 sec). %.The patient had a factor VIII level below 1%. The bleeding time and Quick's time were normal. He was transfused with two units of packed red cells and received infusion of one bag of cryoprecipitate. The hemoglobin rate increased at 10.4g/dL. The ACT decreased but remains prolonged at 36 sec (control 26 sec). The factor VIII level increased at 5%. Infusion of two supplemental bags increased the factor VIII activity at 66% and controlled the bleeding. The patient improved clinically and was released 4 days later.

The second patient is a 1 year old male infant that presented in April 2017 in the emergency room (ER) for a life threatening bleeding that occurred after a circumcision procedure. Parents report no previous medical history either bleeding family history. Physical exam revealed pallor, hypotension and sinus tachycardia. The patient had a compressive voluminous bandage around his penis, which was soaked with blood. Count blood cell showed a deep anemia with a hemoglobin rate at 6g/dL and hematocrit of 17% and normal platelet count at 255G/L. The patient was transfused with one unit of pediatric packed red cells. Vital parameters were stabilized, hemoglobin rate increased at 8g/dL. The patient was referred to the hematology department. Further blood investigation showed an elongated ACT at 66.8 sec (control 26 sec). Quick test was normal. The factor VIII activity was inferior at <1%. Sever hemophilia A was diagnosed. The patient was transfused with one additional unit of pediatric packed red cells. Infusion of one bag cryoprecipitate stopped the bleeding. The ACT normalized at 27 sec and the factor VIII activity level increased at 50%. The hemoglobin rate was at 10.9g/dL. The infant improved clinically and was released days later.

Discussion

Cryoprecipitate was discovered in the 60s and became obsolete in the 80s in developed countries with the production of replacement therapy such as factor VIII by cloning technique [2]. Unfortunately, in low resources countries 80% of the hemophiliac population do not have access to such medicine [3]. Cryoprecipitate is effective to control hemorrhagic episodes in hemophiliac population [4]. Because it is 100 hundred less expensive than hemophilic factor concentrates and manufactured in local blood

banks, cryoprecipitate remains the gold standard therapy for patients with hemophilia A [4].

However, the variability of potency among individual units as noticed in our report does not predict the number of bags required to control a bleeding [1]. Plus, cryoprecipitate contains appreciable amount of other proteins that may exposed patients to immune complications [1]. Also, the potential risk of transmissible of virus disease such as hepatitis C, B and the VIH are other disadvantages of cryoprecipitate noticed [1]. However, improved method of blood donors screening and terminal virus inactivation of pooled plasma products have decreased this risk. Thus cryoprecipitate are used widely without concern.

With the cloning of factor VIII concentrates, that are virus safe and more specific therapies, cryoprecipitate became debatable for hemophiliac management and advocate for the availability of replacement therapies in low resource countries as well. However, most patients cannot afford these therapies because of their high cost and the no support of the government or health insurance. The World Federation of Hemophilia works in partnership with association of hemophilia in low resources countries on increasing and improving facilities diagnosis of hemophilia, setting comprehensive management care but also providing at no charge factor hemophilic concentrates. Thus in Senegal, member of the WFH since 1996, 53.3% of hemophiliac patients had access to hemophiliac factors concentrates [5]. In Cameroon, member of the Organization since 2006 all the hemophiliac patients followed up by the hemophiliac center have access to the medicine [4]. The Congo followed the same path by the creation of a Congolese hemophiliac association in July 2017 and is now entitled to receive from the WFH replacement therapies before its affiliation the WFH.

Conclusion

Until its affiliation to the WFH, cryoprecipitate will remain, in the Congo, the first therapy offered to hemophilic patients.

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