Journal of Blood Disorders

Open Access

Austin Publishing Group

Editorial

New Horizons in Treatment of Patients with Hemophilia and Inhibitor

Mozafari-Mosanen H[1] and Mansouritorghabeh H[2]*

[1]Department of Gastroenterology, Mashhad University of Medical Sciences, Iran

[2]Allergy Research Center, School of Medicine, Mashhad University of Medical Sciences, Iran

***Corresponding author:** Hassan Mansouritorghabeh, Allergy Research Center, Ghaem Hospital, Mashhad University of Medical Sciences, Mashhad, Iran

Received: February 02, 2016; **Accepted:** February 10, 2016; **Published:** February 11, 2016

Editorial

Over the past decades, with improvement in therapeutic coagulation factors introduced to clinic, life expectancy in patients with hemophilia has increased significantly [1]. While in the 1950s and early 1960 whole blood and fresh frozen plasma were only therapeutic options for treatment of patients with hemophilia, now clinical hematologist can select between natural plasma-derived Factor VIII (pd-FVII) that contain von Willebrand Factor (vWF), monoclonal antibody purified pdFVIII (without vWF), and recombinant factor VIII (rFVIII) concentrates (without vWF) produced by cell lies [1]. It seems life expectancy in patients with hemophilia in developing countries is nearly as long as normal individuals [2]. One of the most therapeutic challenges in treatment patients with hemophilia is developing factor VIII inhibitors [3]. Alloantibodies develop in 25-30% of peoples with severe hemophilia A [4] and 3-13% of peoples with mild to moderate hemophilia A [5,6]. The neutralizing inhibitors (mainly IgG1& IgG4) can cause resistance to traditional replacement therapy and terminate to recurring spontaneous hemorrhagic episodes into vital organs, joints and muscles. However, due to high cost of treatments by alternative medicines considerable burdens will be appeared for health provider systems [7,8].

There are some genetical and environmental factors that may predispose patients to develop inhibitors including; type of factor VIII mutation [9], positive family history in first degree relatives, African or Hispanic ethnicity, polymorphism in MHC class II, IL-10, TNF-α, cytotoxic T-lymphocyte antigen-4 [10], age below 6 months in first treatment, prophylaxis versus on-demand therapy, rFVIII versus pdFVIII with and without vWF. It would appear prudent, on the basis of these data that development of inhibitor is multi-factorial process.

It seems future surveys in field of treatment of peoples with hemophilia and inhibitor included following approaches:

- The manufacture of large vials of pdFVIII and rFVIII concentrates to cover needs of peoples with hemophilia especially in developing countries.
- The improvement factor VIII molecules with higher half-life (such as pegylation, glycosylation and stabilization of FVIII molecule), better functionally and hemostatic activityand less immunogenicity.
- The improvement factor VIII mimetic antibody.
- Usage of inhibitor by-passing medicines and non-factor agents with long duration of action such as antithrombin knock down and anti-TFPI (Tissue Factor Pathway Inhibitor).
- The robust of surveys on gene therapy that looks to treat this monogenic disease and sweep the therapeutic board.

It would be expected to witness a race between traditional coagulation approaches and gene therapy in future decade to set optimum treatment, although both of them will catch useful niches.

References

1. Franchini M. The modern treatment of haemophilia: a narrative review. Blood Transfus. 2013; 11: 178-182.
2. Mansouritorghabeh H, Manavifar L, Banihashem A, Modaresi A, Shirdel A, Shahroudian M, et al. An investigation of the spectrum of common and rare inherited coagulation disorders in north-eastern Iran. Blood Transfus. 2013; 11: 233-240.
3. Dorgalaleh A, Dadashizadeh G, Bamedi T. Hemophilia in Iran. Hematology. 2016; (just accepted): 1-23.
4. Lai JD, Georgescu MT, Hough C, Lillicrap D. To clear or to fear: An innate perspective on factor VIII immunity. Cell Immunol. 2015.
5. Modaresi AR, Torghabeh HM, Pourfathollah AA, Shooshtari MM, Yazdi ZR. Pattern of factor VIII inhibitors in patients with hemophilia A in the north east of Iran. Hematology. 2006; 11: 215-217.
6. van Velzen AS, Eckhardt CL, Streefkerk N, Peters M, Hart DP, Hamulyak K, et al. The incidence and treatment of bleeding episodes in non-severe haemophilia a patients with inhibitors. Thromb Haemost. 2015; 115.
7. Laffan M. New products for the treatment of haemophilia. Br J Haematol. 2016; 172: 23-31.
8. Rocha P, Carvalho M, Lopes M, Araujo F. Costs and utilization of treatment in patients with hemophilia. BMC Health Serv Res. 2015; 15: 484.
9. Witmer C, Young G. Factor VIII inhibitors in hemophilia A: rationale and latest evidence. Ther Adv Hematol. 2013; 4: 59-72.
10. El-Asrar MA, Hamed Ael-S, Darwish YW, Ismail EA, Ismail NA. Assessment of the frequency of regulatory T cells (CD4+CD25+CD127-) in children with hemophilia A: relation to factor VIII inhibitors and disease severity. Blood Coagul Fibrinolysis. 2016; 27: 42-46.

Citation: Mozafari-Mosanen H and Mansouritorghabeh H. New Horizons in Treatment of Patients with Hemophilia and Inhibitor. J Blood Disord. 2016; 3(1): 1035.