Immune Tolerance Therapy (ITI) in Children with FVIII Inhibitors: Progress Report

Introduction

In up to 40% of cases, Hemophilia A (HA) treatment is complicated by the development of alloantibody inhibitors against FVIII, rendering the patient resistant to replacement therapy and thereby increasing the risk of unmanageable bleeding, particularly in children (1). These severe complications are also associated with a significant financial burden (2, 3). Life-long replacement therapy and prophylaxis increase the risk of unmanageable bleeding, particularly in children (2). A high proportion of patients, predominantly children, have severe inhibitors against FVIII, rendering the patient resistant to replacement therapy and thereby increasing the risk of unmanageable bleeding (4).

The comparative cost estimation for octanate® in ITI versus bypassing agent therapy in the ObsITI study-based on patient data collected during the ObsITI study—showed savings on average of up to €7.5 million per patient over 10 years of treatment. These results demonstrate the clinical and economic benefits of ITI with octanate®, which may help to reduce the financial burden and improve the quality of life for patients with inhibitors and their families (5).

Results

ITI outcome

During the treatment period, 11 patients (86.2%) achieved complete ITI success (100% FVIII:C 12-23 BU) and 2 patients (13.8%) achieved partial ITI success (100% FVIII:C 2-12 BU). Nine patients (69.2%) achieved complete ITI (100% FVIII:C 12-23 BU) and 5 patients (38%) achieved partial ITI (100% FVIII:C 2-12 BU). The mean ITI duration was 11.2 months, with a range of 3-24 months. The BEP analysis resulted in 1.2 years on average. The estimated savings over 10 years, € million, is 7.5 (on demand) or 5.1 (prophylactic).

Utilization of resources and related costs

In order to evaluate the utilization of resources and related cost of treatment of severe hemophilia patients with inhibitors in Russia, the following approach was used:

- Financial study subjects were those patients in the ObsITI study-based on patient data collected during the ObsITI study—showing severe or moderate inhibitors with FVIII antibodies and who had been or currently being treated with octanate® for at least 1 year before the start of the ObsITI study and at the time of the ObsITI study. All patients were prospective patients undergoing or having undergone ITI treatment with octanate® from the initiation of the research study in December 2005 up until the end of March 2011.

Data were collected by reviewing each patient’s medical and pharmaceutical records: information on patient characteristics, laboratory test results, treatment history, and treatment plan. In order to evaluate the utilization of resources and related cost of treatment of severe hemophilia patients with inhibitors in Russia, the following approach was used:

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Conclusions

- Despite the stringent success criteria, octanate®, along with the high-dose Bonn Protocol, has led to complete ITI success rate of 11 of 14 (78.6%) children with high responding inhibitors and poor ITI prognostic factors:
- During ITI treatment with octanate®, bleeding frequency, hospitalization rates as well as administration of expensive FVIII bypassing agents were significantly reduced for all patients.
- The number of bleeding episodes was reduced 3.4-fold in median during ITI with octanate®, in successfully tolerized patients.
- During ITI with octanate® 90% of the bleeding episodes were resolved without need for bypassing therapy and with no change in HA inhibitor levels.