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Real World Health Plan Data Analysis: Evaluating the Impact of Extended Half-Life Factor Products and Emicizumab-kxwh on Annualized Bleed Rate in Patients with Hemophilia

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Background

- In hemophilia, treatment options include standard half-life (SHL) factor products, extended half-life (EHL) factor products, and emicizumab-kxwh.
- SHL factor VIII products are typically dosed three to four times weekly, and factor IX products are typically dosed twice weekly.
- EHL products allow for twice-weekly dosing for factor VIII EHL products, and every 7 to 14 days for factor IX EHL products.
- EHL factor products offer patients the opportunity to reduce infusion frequency, which may result in better treatment adherence.
- Emicizumab acts by bridging factor IXa and factor X to replace the effect of the missing activated factor VIII to improve hemostasis.
- Administered subcutaneously, emicizumab may reduce injection frequency further, with dosing intervals ranging from once weekly to once monthly.
- In terms of measuring efficacy among hemophilia products, annualized bleed rate (ABR) is one way to assess clinical benefit.
- Decreased ABR can lead to long-term health benefits and a reduction in total cost of care by preventing arthropathy and other sequelae of uncontrolled bleeding, such as hospitalizations and the need for joint replacement surgeries.
- With a variety of products available and the high cost of hemophilia therapies in general, evaluating the clinical benefit of EHL factor products and emicizumab remains a priority among payers.
- Magellan Rx currently conducts a hemophilia management program in which:
  - Benefit management and data collection are completed through implementation of utilization review to ensure appropriate use and collection of essential clinical info; management of assay, inventory and dose are also incorporated.
  - Key opinion leaders specializing in hemophilia are leveraged to provide in-depth reviews and to ensure appropriate use of medication.

Objective

- To evaluate clinical benefit by measuring ABRs associated with various types of hemophilia products.

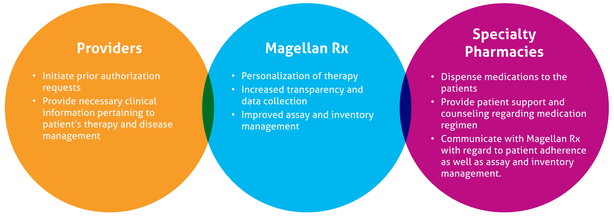
Methods

- Data Source & Study Time Period
  - This retrospective study analyzed data collected from a comprehensive hemophilia management program for 9 health plans with over 9.5 million covered lives combined.
  - Data analyzed was collected from January 1st, 2020, through December 31st, 2020.
- Inclusion Criteria
  - Diagnosis of hemophilia A or B, confirmed based on utilization of factor VIII or factor IX products.
  - Utilization of factor VIII products, factor IX products, or emicizumab.
- Exclusion Criteria
  - Patients with inhibitors based on utilization of bypassing agents, and/or anti-inhibitor coagulant complex.
  - Diagnosis of von Willebrand Disease based on use of von Willebrand factor products.
  - Diagnosis of other factor deficiencies (Factor X, Factor XIII, etc.) based on the use of other factor products.

A comprehensive hemophilia management program can **optimize patient therapy** while aiding in bleed reduction.

Methods *cont.*

- Health plans in scope for the analysis partnered with Magellan Rx to implement and execute a hemophilia management program.



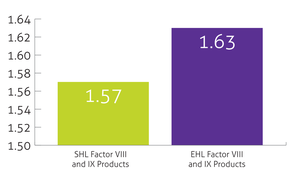
- ABR was calculated using the following formula:
  - $ABR = \frac{\textit{reported bleeds}}{\textit{months of authorization}} \times 12$
- Statistical analysis
  - T-tests were used to test for significant differences between the annual bleed rates for the various examined cohorts.

Results

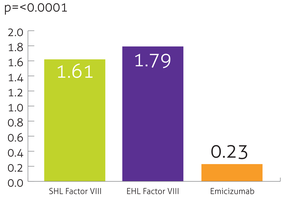
Baseline Demographics

Product Category	Patients (n)
EHL Products	74
SHL Products	315
Factor VIII EHL	52
Factor VIII SHL	271
Emicizumab	101

Annualized Bleed Rate
P=0.8831



Annualized Bleed Rate
p=<0.0001



Discussion

- A total of 411 unique members met the inclusion criteria during the assessment period.
- Patients utilizing emicizumab had a 7-fold decrease in ABR compared with SHL factor VIII products and a 7.8-fold decrease compared with EHL products.
- When comparing the ABR of patients using EHL factor VIII and IX products (n=74) and SHL factor VIII and IX products (n=315), the difference in ABR was not statistically significant (EHL vs. SHL; 1.63 vs. 1.57; p=0.8831).
- When comparing factor VIII products alone, the ABR with factor VIII EHL products (n=52) versus factor VIII SHL products (n=271) was not statistically significant (1.79 vs 1.61, p=0.7152).
- The ABR for patients utilizing emicizumab (n=101) was 0.23 versus 1.61 and 1.79 for patients utilizing factor VIII SHL and EHL products, respectively (p=<0.0001). The differences in ABR were statistically significant.
- Study limitations include:
  - Bleed rate is based on patient reported data collected by pharmacies at the time of dispensing.
  - Due to some patients having less than a full year of dispenses during the measurement period, the calculated annualized bleed rate may differ from the patient's actual annual bleed rate over a 12-month period.
  - Differences in bleed rate can be impacted by patient age and physical activity level.
  - Some patients may be included in more than one product category during the measurement period due to product changes.
  - These results have not been adjusted for any potential confounders.

Conclusion

- Longer follow-up may provide more insight into the difference in ABR between SHL and EHL products and the impact of a high touch hemophilia management program on ABR.
- Examples of interventions that may be made in a patient experiencing frequent breakthrough bleeds include increasing the dose or frequency of administration, change in product, and completion of pharmacokinetic testing or inhibitor testing.
- The data shows that despite advances in antihemophilic therapy, patients are still experiencing significant bleeds. A comprehensive approach to hemophilia management may aid in the reduction of ABR due to clinical interventions made in patients with frequent breakthrough bleeds.

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Disclosures

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