

Recommendations:

- Alternate dose Emicizumab regimen (3 mg/kg every 4 weeks given in sub-cutaneous route) is cost-saving compared to on-demand therapy with FVIII and Low dose FVIII prophylaxis for severe Haemophilia A patients without inhibitors at the current Emicizumab pricing (₹422.2/mg)
- Implementing alternate-dose Emicizumab prophylaxis for Haemophilia A patients without inhibitors in a typical district (n = 14 patients) would require ₹78 lakhs, equivalent to 1.63% of the district's NHM health budget

Key Findings:

For severe Haemophilia A patients without inhibitors:

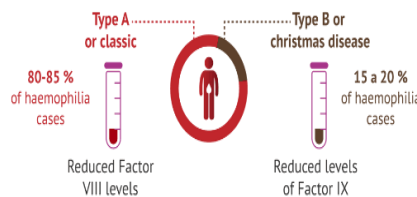
- Cost Effectiveness: Alternate dose of Emicizumab is cost-saving for severe Haemophilia A patients without inhibitors in India*.
- Average annual budget impact (₹) for managing one Haemophilia A patient without inhibitors using alternate dose Emicizumab = ₹ 5,57,140.
- To include alternate dose Emicizumab prophylaxis in the district hospital services, it will require an additional ₹78 lakhs (1.63% of average annual district NHM budget) for 14 patients in a typical district in India.

*The incremental cost-effectiveness ratio per QALY is ₹- 97.63 lakhs for an Alternate dose of Emicizumab

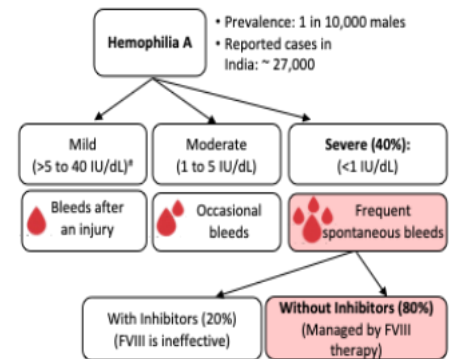
Background

- Haemophilia is a genetic bleeding disorder caused by deficiencies in specific clotting factors that are essential for normal blood coagulation. It is inherited in an X-linked recessive pattern, meaning the faulty gene is carried on the X chromosome. Because males have only one X chromosome, they are more commonly affected, while females are typically carriers.
- Emicizumab is monoclonal antibody. It is used to functionally replace Factor VIII and effective in reducing bleeding rate.

| PICO | Description of the components of PICO |
|--------------|---|
| Population | Severe Haemophilia A patients without Inhibitors |
| Intervention | Emicizumab prophylaxis <ul style="list-style-type: none"> • Standard-dose: 3 mg/kg weekly × 4 (loading dose) followed by 6 mg/kg every 4weeks • Alternate dose: 3 mg/kg every 4 weeks (no loading dose) |
| Comparator | <ol style="list-style-type: none"> 1. On-demand therapy using SHL FVIII: Body weight × 40 IU/dl × 0.5 2. Low-dose prophylaxis (LDP) with SHL FVIII: 10 -15 IU/kg, 2-3 times per week |
| Outcome | Incremental cost-effectiveness ratio (ICER) per QALY gained |



Burden and classification:



*Based on serum factor VIII activity level

Results:

| Outcome (Discounted at 3%) | SHL FVIII | | Alternate dose Emicizumab prophylaxis | |
|-------------------------------|------------|----------------------|---------------------------------------|--------------------------|
| | On-demand | Low dose prophylaxis | On-demand SHL FVIII | LDP with SHL FVIII |
| Costs in ₹ (Cr) | 4.07 | 2.32 | 1.51 | |
| QALYs | 19.8 | 21.3 | 22.4 | |
| Bleeds | 406 | 75 | 2 | |
| Comparator* | Comparator | | On-demand SHL FVIII | LDP with SHL FVIII |
| Incremental costs in ₹ (Cr) | | | -2.55 | -0.80 |
| Incremental QALYs | | | 2.6 | 1.1 |
| ICER / QALY gained ₹ | | | Cost Saving* | Cost Saving [#] |

*ICER for alternate dose Emicizumab vs on-demand SHL FVIII = -97.63 Lacs, [#] ICER for alternate dose Emicizumab vs LDP with SHL FVIII = -76.16 Lacs

Budget Impact Analysis:

Average annual budget impact (₹) for managing one Haemophilia A patient without inhibitors using alternate dose Emicizumab = ₹ 5,57,140. Assuming a budget of 50 lakhs for patients with rare disease with 50 years life expectancy, the unit price of Emicizumab needs to be reduced to ₹ 75.0/mg.

| Outcome | On-demand therapy with SHL FVIII (comparator*) | Low dose prophylaxis with SHL FVIII (comparator*) | Alternate dose Emicizumab |
|---|--|---|---------------------------|
| Total four-year budget (2025-2028) (₹) (Cr) | 8.77 | 4.69 | 3.11 |
| Average annual budget impact (₹) (n=14) | 2.19 Cr (4.58%) | 1.17 Cr (2.45%) | 77.99 Lacs (1.63%) |

Conclusion:

- Alternate dose Emicizumab prophylaxis is cost-saving compared to on-demand treatment and low dose prophylaxis with FVIII.
- To meet the rate consistent with rare disease policy of annual per-patient budget of ₹1 lakh, the price of Emicizumab needs to be reduced from ₹422.2/mg to ₹75/mg for managing Haemophilia A without inhibitors.

Reference:

1. Srivastava A, Santagostino E, Dougall A, Kitchen S, Sutherland M, Pipe SW, et al. WFH Guidelines for the Management of Haemophilia, 3rd edition. Haemophilia [Internet]. 2020 Aug [cited 2025 Sept 11];26(S6):1-158. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/hae.14046>
2. Kragh N, Tytula A, Pochopien M, Aballéa S, Toumi M, Hakimi Z, et al. Cost-effectiveness of recombinant factor VIII Fc versus emicizumab for prophylaxis in adults and adolescents with haemophilia A without inhibitors in the UK. Eur J Haematol. 2023 Mar;110(3):262-70. <https://doi.org/10.1111/ejh.13901>
3. Mahlangu J, Oldenburg J, Paz-Priel I, Negrier C, Niggli M, Mancuso ME, et al. Emicizumab Prophylaxis in Patients Who Have Haemophilia A without Inhibitors. New England Journal of Medicine. 2018 Aug 30;379(9):811-22. <https://doi.org/10.1056/NEJMoa1803550>