

Recommendations:

- Alternate-dose Emicizumab prophylaxis (3 mg/kg every 4 weeks given in sub-cutaneous route) is cost-saving compared to ondemand bypassing agents for severe Haemophilia A patients with inhibitors at the current Emicizumab pricing (₹422.2/mg)
- Implementing alternate-dose Emicizumab prophylaxis for Haemophilia A patients with inhibitors in a typical district (n = 3 patients) would require ₹15 lakhs, equivalent to 0.3% of the district's NHM health budget

Key Findings:

For severe Haemophilia A patients with inhibitors:

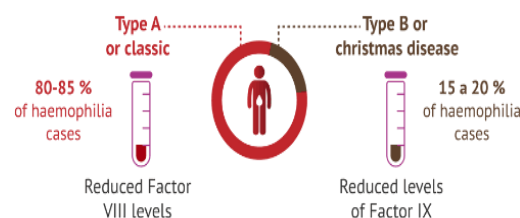
- Cost Effectiveness: Alternate dose of Emicizumab is cost-saving for severe Haemophilia A patients with inhibitors in India*.
- Average annual budget impact for managing one Haemophilia A patient with inhibitors using alternate dose Emicizumab = ₹ 5,01,529.
- To include alternate dose Emicizumab prophylaxis in the district hospital services, it will require an additional ₹15.04 lakhs (0.3% of average annual district NHM budget) for three patients in a typical district in India.

*The incremental cost-effectiveness ratio per QALY is ₹ -9.86 Cr for an Alternate dose of Emicizumab.

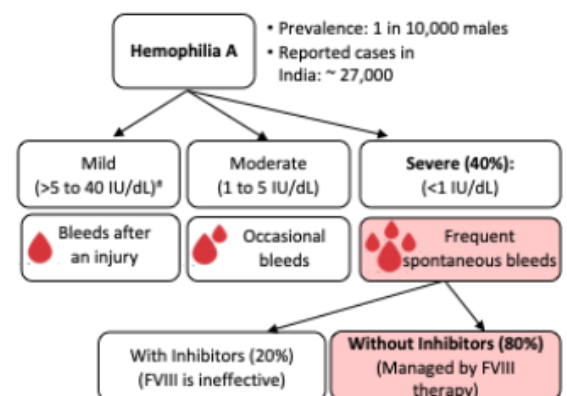
Background

- 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 with Inhibitors
Intervention	Emicizumab prophylaxis <ul style="list-style-type: none"> • <i>Standard-dose</i>: 3 mg/kg weekly × 4 (loading dose) followed by 6 mg/kg every 4weeks • <i>Alternate-dose</i>: 3 mg/kg every 4 weeks (no loading dose)
Comparator	On-demand therapy with bypassing agents: Activated Prothrombin Complex Concentrate (aPCC) 50 IU/kg B.D. and/or recombinant FVIIa 75 mcg/kg
Outcome	Incremental cost-effectiveness ratio (ICER) per QALY gained



Burden and classification:



Based on serum factor VIII activity level

Results:

Outcome (discounted 3%)	On-demand bypassing agent therapy (comparator)	Standard dose Emicizumab	Alternate dose Emicizumab
Total cost (₹) (Cr)	63.01	3.29	1.5
Total QALYs	16.15	22.38	22.38
Total bleeds	897.88	0.63	0.63
Incremental cost (₹) (Cr)	Comparator	-59.71	-61.46
Incremental QALYs		6.23	6.23
Bleeding episodes averted (n)		897	897
ICER per QALY gained (₹)		Cost- Saving*	Cost- Saving [#]

*ICER for standard dose emicizumab = -9.58 Cr, # ICER for alternate dose emicizumab = -9.86 Cr

Budget Impact:

Average annual budget impact (₹) for managing one Haemophilia A patient with inhibitors using alternate dose Emicizumab = ₹ 5,01,529. Assuming a budget of 50 lakhs for patients with rare disease with 50 years life expectancy, the unit price of Emicizumab should be reduced to ₹ 85.0/mg.

Outcome	On-demand therapy with bypassing agents (comparator)	Standard dose Emicizumab	Alternate dose Emicizumab
Total four-year budget (2025-2028) (₹)	25.59 Cr	1.34 Cr	60.18 Lacs
Average annual budget impact (₹) (n=3)	6.39 Cr (13.4%)	33.59 Lacs (0.7%)	15.04 Lacs (0.3%)

Conclusion:

- Both standard and alternate dose Emicizumab prophylaxis are cost-saving compared to on-demand bypassing agents.
- 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 ₹85/mg for managing Haemophilia A with 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. Polack B, Trossaert M, Cousin M, Baffert S, Pruvot A, Godard C. Cost-effectiveness of Emicizumab vs bypassing agents in the prevention of bleeding episodes in haemophilia A patients with anti-FVIII inhibitors in France. Haemophilia [Internet]. 2021 [cited 2025 Oct 14];27. <https://doi.org/10.1111/hae.14129>.
3. Oldenburg J, Mahlangu JN, Bujan W, Trask P, Callaghan MU, Young G, et al. The effect of Emicizumab prophylaxis on health-related outcomes in persons with haemophilia A with inhibitors: HAVEN 1 Study. Haemophilia [Internet]. 2019 Jan [cited 2025 Oct 11];25(1):33-44. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/hae.13618>