

The economic impact of reducing bleeding with emicizumab in patients with hemophilia A and factor VIII inhibitors – Brazilian case

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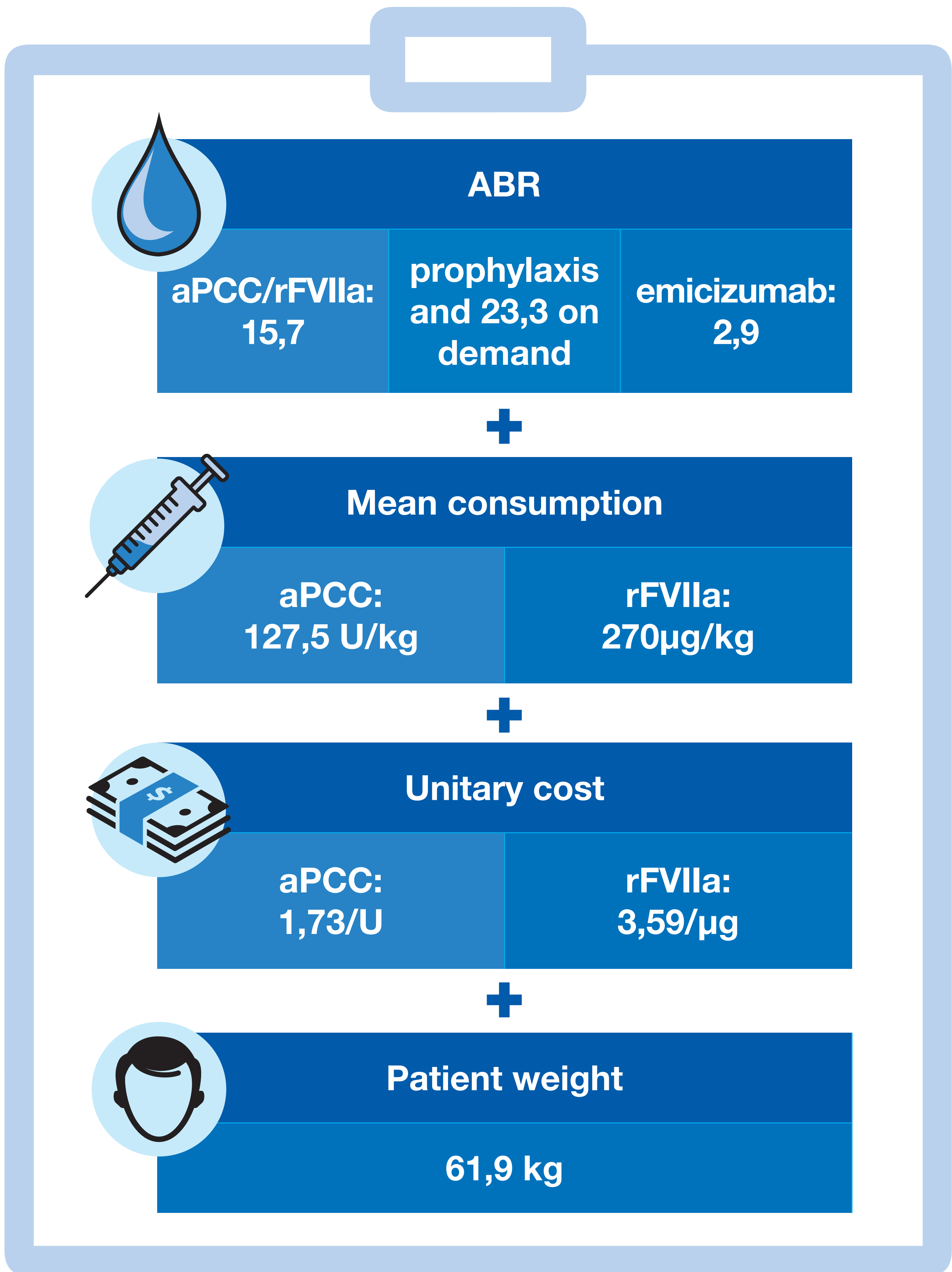
1.Techtrials Pesquisa e Tecnologia LTDA.
2. Produtos Roche Químicos e Farmacêuticos S/A

Introduction

Hemophilia A is an X-linked hereditary bleeding disorder, caused by a deficiency in factor VIII (FVIII) clotting. Treatment aims at controlling bleeding through FVIII replacement, bypass agents, or **emicizumab**. FVIII treatments can lead to the development of FVIII inhibitors, a serious complication of the disease.¹ This study aims to analyze **the cost of treating bleeding**, considering drug treatment from the perspective of the Brazilian public health system.

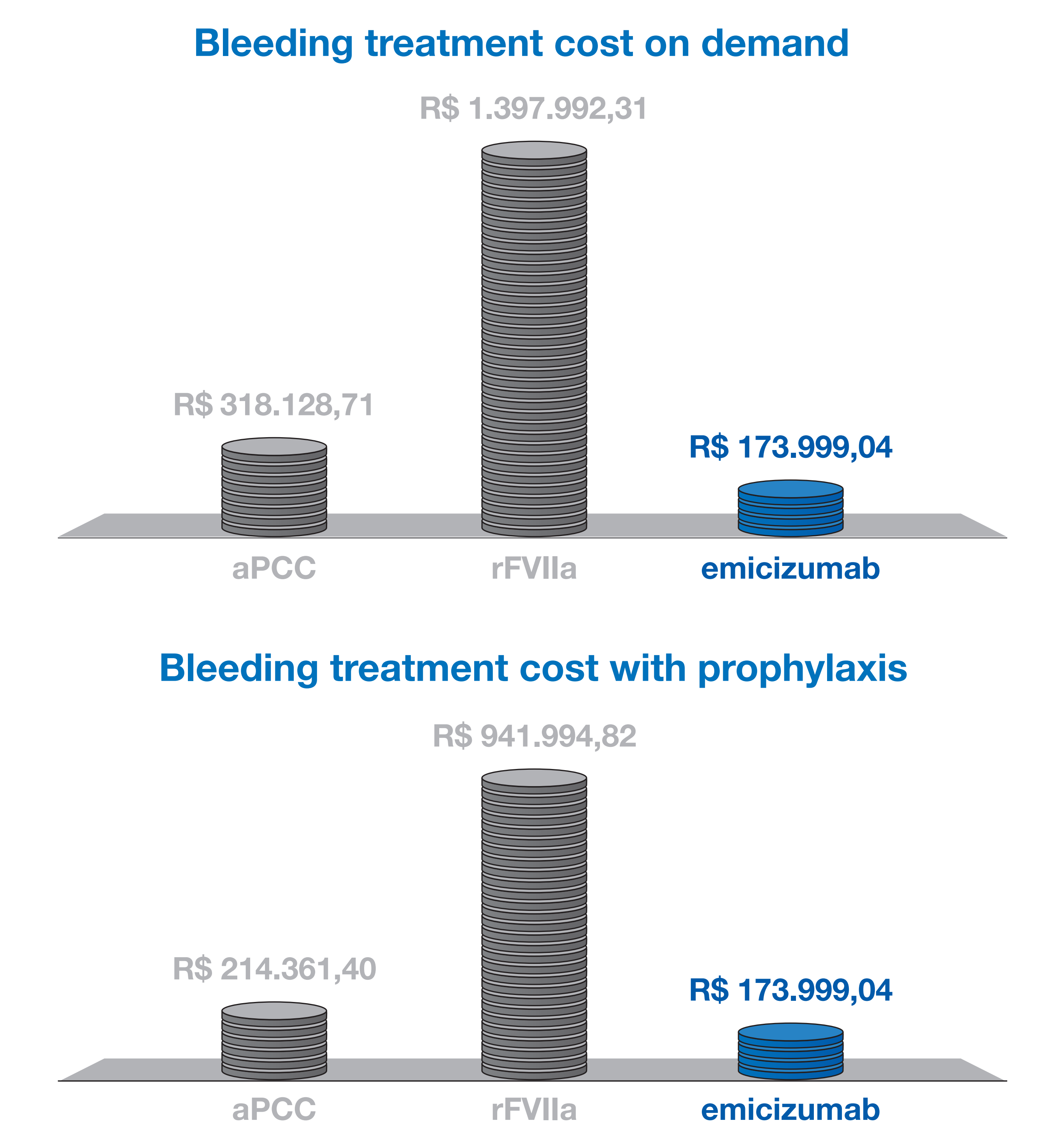
Methods

This study used annual bleeding rates (ABR), local guidelines regimens and prices.^{2, 3, 4, 5} We considered an average adult patient weighing **61,9 kg**. The ABR used, was: bypass agents **15,7 in prophylaxis and 23,3 on demand** treatment and for **2,9 emicizumab**. A mean consumption of **270 mgc/kg** of recombinant activated factor VII (rFVIIa) or **127,5 U/kg** of activated prothrombin complex concentrate (aPCC) was considered for the treatment of each bleeding. The unit cost of **aPCC was R\$ 1,73/U** and **R\$ 3,59/µg of rFVIIa**. The costs of immunotolerance treatment were not computed.



Results

The annual cost of prophylaxis drug treatment of bleeding in an average patient with Bypass was **R\$ 214,361.40 with CCPa** and **R\$ 941,994.82 with rFVIIa**. In patients treated with **emicizumab**, the cost was **R\$ 173,999.04 with the use of rFVIIa** to control bleedings. The cost is more than **5 times lower in patients treated with emicizumab**, which represents an **81.5% reduction** in the average annual cost of drug treatment for bleeding. In the on-demand scenario, the cost is about **8 times lower** when emicizumab is used.



Conclusion

Emicizumab represents an opportunity in terms of effectiveness with a **reduction of more than 80%** in the number of bleeds/year, with savings that can range from **R\$174,765.98 (prophylactic aPCC)** to **R\$1,223,993.27 (rFVIIa on demand)** for every average patient treated with this technology. These data suggest the opportunity to optimize the allocation of resources to technologies that offer greater sustainability for the public health care Brazilian system.

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