Expert-Estimated Treatment Outcomes And Residual Disease In Hemophilia Care In Brazil: Findings From A Modified Delphi Consensus

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BACKGROUND

Hemophilia is a rare, inherited X-linked bleeding disorder characterized by a deficiency or dysfunction of coagulation factor VIII (hemophilia A) or factor IX (hemophilia B), resulting in a lifelong tendency to spontaneous or trauma-related bleeding, particularly into joints and muscles.[1]

For decades, the cornerstone of hemophilia management has been replacement therapy with plasma-derived or recombinant clotting factor concentrates, administered either on demand or as regular prophylaxis. More recently, the therapeutic landscape has expanded substantially with the introduction of extended half-life factor products, non-factor therapies and rebalancing agents targeting natural anticoagulant pathways.[2]

Despite therapeutic advances, hemophilia care in Brazil still relies on the prophylactic treatment with clotting factor concentrates for most patients and continues to face significant challenges related to treatment burden, access barriers, suboptimal adherence, and residual disease.[3,4]

OBJECTIVES

To describe expert-based estimates related to treatment outcomes, adherence, and residual disease in hemophilia A and B, derived from a modified Delphi consensus conducted among Brazilian hematologists.

METHODS

- A modified Delphi panel was conducted with a convenience sample of **12 hematologists** from specialized public health centers across **all geographic regions of Brazil**.
- The process comprised **three rounds conducted between October and December 2025**: two asynchronous rounds using anonymized online questionnaires followed by a structured synchronous online consensus meeting focused on unresolved items.
- As part of the Delphi panel, a specific block addressed treatment effectiveness, adherence, and residual disease.
- Ten hematologists with extensive experience in the public health system provided estimates grounded in clinical practice on the number of annual bleeding episodes, proportion of joint complications, and adherence rates. Responses were summarized using descriptive statistics (mean, standard deviation [SD], and range).

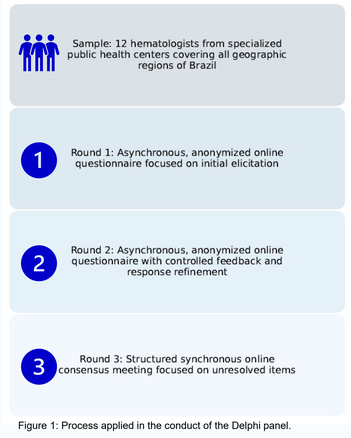

Figure 1: Process applied in the conduct of the Delphi panel.

RESULTS

Experts estimated that patients with **hemophilia A without inhibitors** experience a mean of **3.3 bleeding episodes per year** while on continuous replacement prophylaxis (SD: 2.0; range: 1–8), increasing to **5.6 episodes among those with inhibitors** (SD: 1.8; range: 3–10).

For **hemophilia B**, **estimated mean annual bleeding rates were 2.3 episodes** in patients without inhibitors (SD: 1.6; range: 0–6) and **5.2 episodes in those with inhibitors** (SD: 2.4; range: 2–10).

Reduced adherence to factor replacement therapy was estimated to increase bleeding frequency by a mean of 6.1 episodes per year (SD: 2.2; range: 4–10).

Arthropathy was estimated to affect 27.0% of patients receiving **primary prophylaxis** (SD: 15.3; range: 5–50) **and 42.5**% of those on **secondary prophylaxis** (SD: 18.4; range: 10–70).

Surgical intervention was required in an estimated 10.4% (SD: 9.0; range: 0–25) **and 20.1%** (SD: 14.2; range: 0–40), respectively.

Compromised adherence to prophylaxis was estimated in 33.0% of patients (SD: 25.7; range: 10–80). (**Figure 2**)

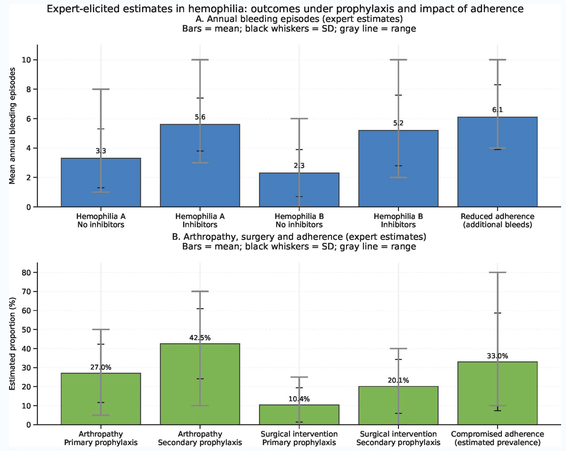

Figure 2: Expert-elicited estimates of mean annual bleeding episodes, complications and suboptimal adherence.

DISCUSSION

This modified Delphi consensus provides novel, practice-based insights into treatment outcomes and residual disease burden among patients with hemophilia in Brazil from the perspective of experienced hematologists.

The findings highlight that, despite the widespread adoption of prophylactic factor replacement therapy, bleeding events remain clinically relevant, particularly among patients with inhibitors, who were estimated to experience substantially higher annual bleeding rates compared to those without inhibitors.

Importantly, reduced adherence to prophylaxis emerged as a critical driver of disease burden, with experts estimating a marked increase in bleeding frequency associated with suboptimal adherence.

This underscores that therapeutic efficacy in real-world settings is not solely dependent on product characteristics, but also on patient-related factors, such as treatment convenience and adherence to long-term regimens.

The results further emphasize the persistence of long-term complications, including hemophilic arthropathy, even among patients receiving primary prophylaxis, suggesting that current approaches may not fully prevent joint damage in routine clinical practice.

The relatively high proportion of patients estimated to have compromised adherence highlights persistent structural and behavioral challenges within the Brazilian public health context, including treatment burden and access barriers. These findings align with broader evidence indicating unmet needs in hemophilia care in Brazil despite therapeutic advances.

Results should be interpreted in light of potential limitations, including reliance on subjective estimates, a relatively small sample of specialists, and the absence of direct patient-level data. Nonetheless, these findings provide valuable real-world-informed estimates in settings where robust epidemiological data may be limited.

CONCLUSION

This modified Delphi consensus indicates that a substantial burden of bleeding events, joint complications, and suboptimal adherence persists among patients with hemophilia in Brazil, even in the context of prophylactic treatment with clotting factor concentrates.

These findings highlight important residual unmet needs and suggest that improving adherence and optimizing treatment approaches remain critical priorities to reduce disease burden. Overall, expert-based real-world insights such as these can complement existing evidence and support healthcare decision-making, particularly in environments where comprehensive real-world data are scarce. This evidence may inform future policies and guide the adoption of innovative therapeutic strategies aimed at improving outcomes in hemophilia care in Brazil.

DISCLOSURES

This study was sponsored by Pfizer, which commissioned IQVIA for its execution.

JL, FI, and BW are employees of IQVIA, which received funding from Pfizer for the conduct of this study. DP, MA, AKN, RFA, and AD are current employees of Pfizer.

Ethical approval was not required for this study. All participants provided electronic informed consent prior to their inclusion in the study.

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