Comprehensive Cancer Center Tübingen-Stuttgart



















San Diego, LBA-3, December 10, 2024



EXTENDED TREATMENT OF VENOUS THROMBOEMBOLISM WITH REDUCED- VS FULL-DOSE DIRECT ORAL ANTICOAGULANTS IN PATIENTS AT HIGH RISK OF RECURRENCE. THE RENOVE TRIAL



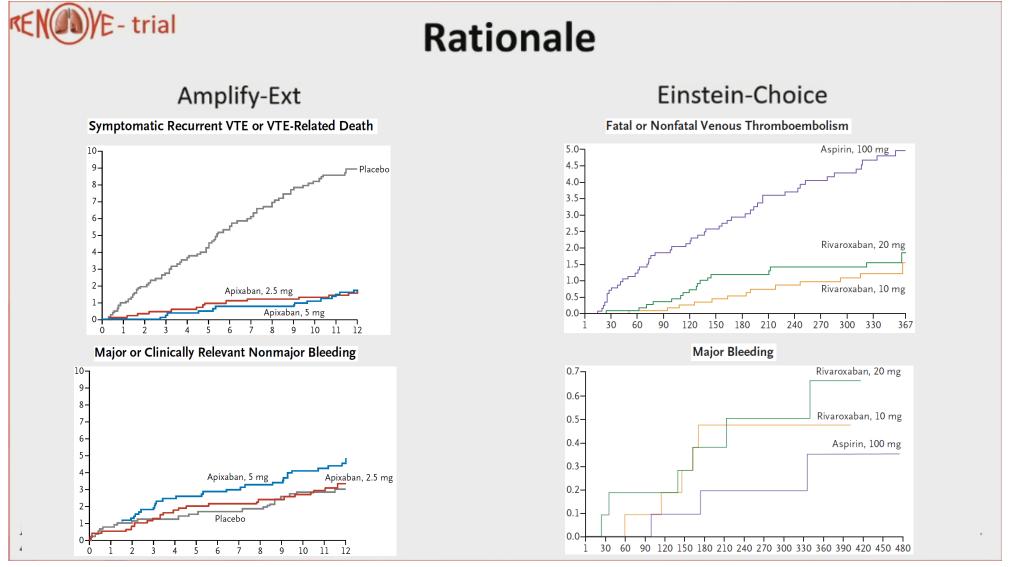
Francis Couturaud, M.D., Ph.D., Jeannot Schmidt, M.D., Ph.D., Olivier Sanchez, M.D., Ph.D., Alice Ballerie, M.D., Marie-Antoinette Sevestre, M.D., Ph.D., Nicolas Meneveau, M.D., Ph.D., Laurent Bertoletti, M.D., Ph.D., Jérôme Connault, M.D., Ph.D., Ygal Benhamou, M.D., Ph.D., Joël Constans, M.D., Ph.D., Thomas Quemeneur, M.D., François-Xavier Lapébie, M.D., Ph.D., Gilles Pernod, M.D., Ph.D., Gaël Picart, M.D., Antoine Elias, M.D., Ph.D., Caroline Doutrelon, M.D., Claire Neveux, M.D., Lina Khider, M.D., Ph.D., Pierre-Marie Roy, M.D., Ph.D., Stéphane Zuily, M.D., Ph.D., Nicolas Falvo, M.D., Philippe Lacroix, M.D., Ph.D., Joseph Emmerich, M.D., Ph.D., Isabelle Mahé, M.D., Ph.D., Julien Boileau, M.D., Azzedine Yaici, M.D., Sylvain Le Jeune, M.D., Dominique Stéphan, M.D., Ph.D., Pierre Plissonneau Duquene, M.D., Valérie Ray, M.D., Marc Danguy des Déserts, M.D., Rafik Belhadj-Chaidi, M.D., Bouchra Lamia, M.D., Ph.D., Gruel Yves, M.D., Ph.D., Emilie Presles, M.S., Philippe Girard, M.D., Cécile Tromeur, M.D., Ph.D., Moustapha Farès, M.D., Ph.D., Vincent Rothstein, M.D., Karine Lacut, M.D., Ph.D., Solen Melac, R.N., Sophie Barillot, M.S., Patrick Mismetti, M.D., Ph.D., Silvy Laporte, M.S., Ph.D., Dominique Mottier, M.D., Ph.D., Guy Meyer, M.D., and Christophe Leroyer, M.D., Ph.D., for the RENOVE Investigators*



CLINICALTRIALS.GOV #: NCT03285438 EudraCT #: 2017-002433-31







Francis Couturaud. LBA-3 Extended Treatment of Venous Thromboembolism with Reduced- Vs Full-Dose Direct Oral Anticoagulants in Patients at High Risk of Recurrence.







Rationale

However, these two studies^{1,2}:

- were neither designed nor powered to demonstrate similar efficacy and improved safety with the reduced dose,
- with the inclusion of placebo¹ or aspirin² control groups, enrolled patients with uncertain need for extended anticoagulation.

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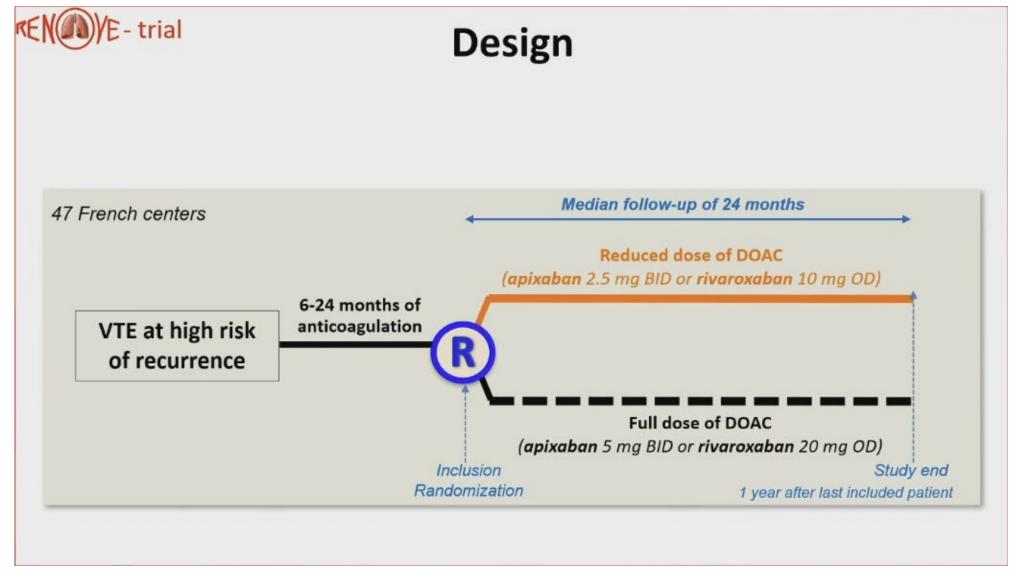


Objectives

 Primary objective: to demonstrate non-inferiority of extended-phase anticoagulation using reduced-dose DOAC versus full-dose DOAC for the prevention of recurrent VTE.













Primary outcome

5-year cumulative incidence

	Reduced Dose (N=1383)	Full Dose (N=1385)	Adjusted HR (95% CI)	P-Value
Primary outcome				
Symptomatic recurrent VTE - no. (%)	19 (2.2)	15 (1.8)	1.32 (0.67 - 2.60)	0.23
Symptomatic recurrent PE	11	13		
Fatal PE	3	3		
Symptomatic isolated proximal DVT	9	2		

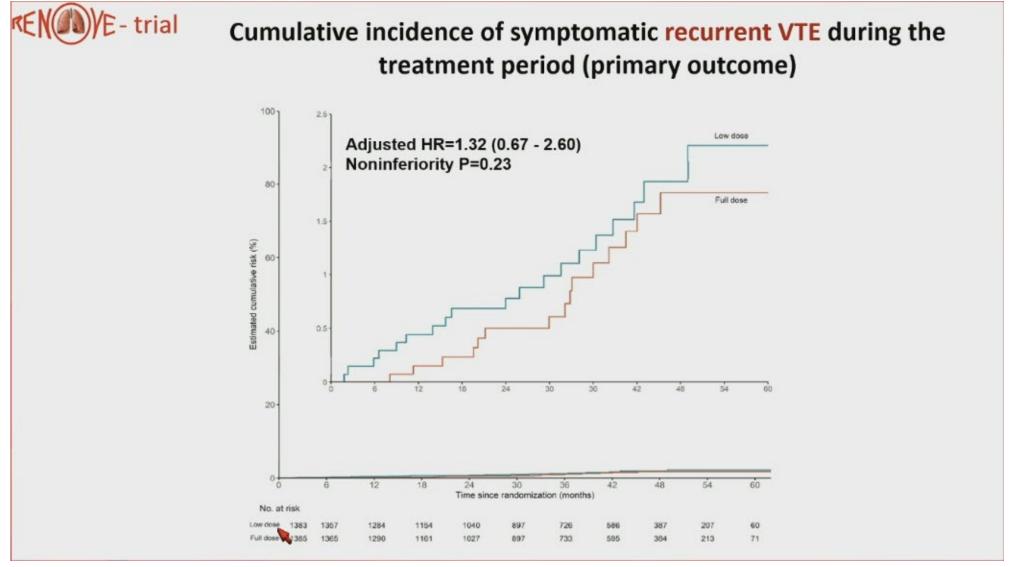




Primary outcome									
5-year cumulative incidence									
	Reduced Dose (N=1383)	Full Dose (N=1385)	Adjusted HR (95% CI)	P-Value					
Primary outcome									
Symptomatic recurrent VTE - no. (%)	19 (2.2)	15 (1.8)	1.32 (0.67 - 2.60)	0.23					
Symptomatic recurrent PE	11	13							
Fatal PE	3	3							
Symptomatic isolated proximal DVT	9	2							
	1	1	1						
Annual incidence rates	0.50% (0.28-0.72)	0.40% (0.20-60)	Absolute differe 0.40% (-1.05; 1.85)	ence					













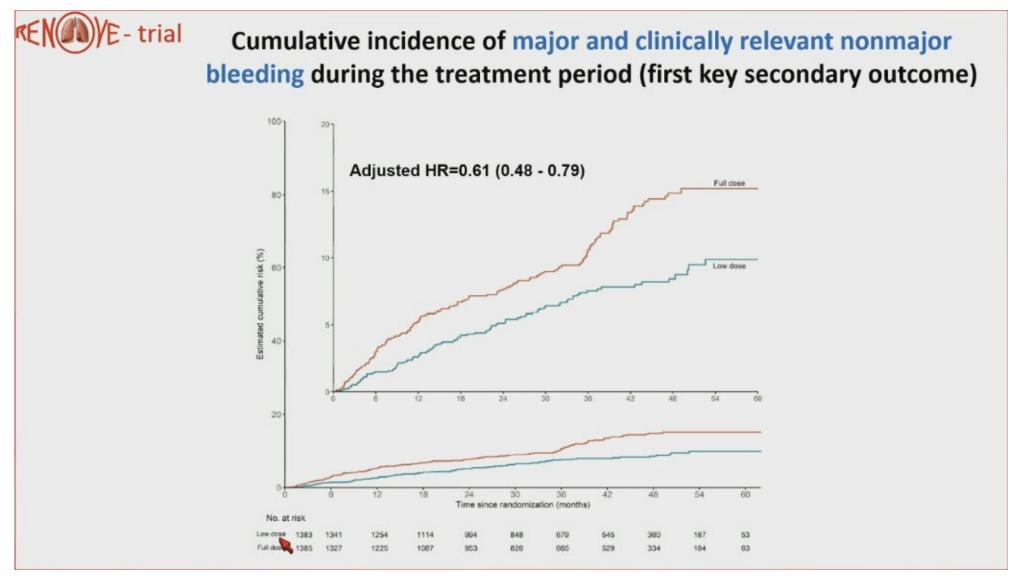
Secondary outcomes

5-year cumulative incidence

	Reduced Dose (N=1383)	Full Dose (N=1385)	Adjusted HR (95% CI)	P-Value
Key secondary outcomes				
Clinically relevant bleeding - no. (%)	96 (9.9)	154 (15.2)	0.61 (0.48 - 0.79)	
Major bleeding	15 (2.1)	38 (4.0)	0.40 (0.22 - 0.72)	
Fatal	2	3		
Clinically relevant non major bleeding	84 (8.6)	118 (11.5)	0.70 (0.53 - 0.93)	
Composite (recurrent VTE, or clinically relevant bleeding) - no. (%)	113 (11.8)	166 (16.5)	0.67 (0.53 - 0.86)	



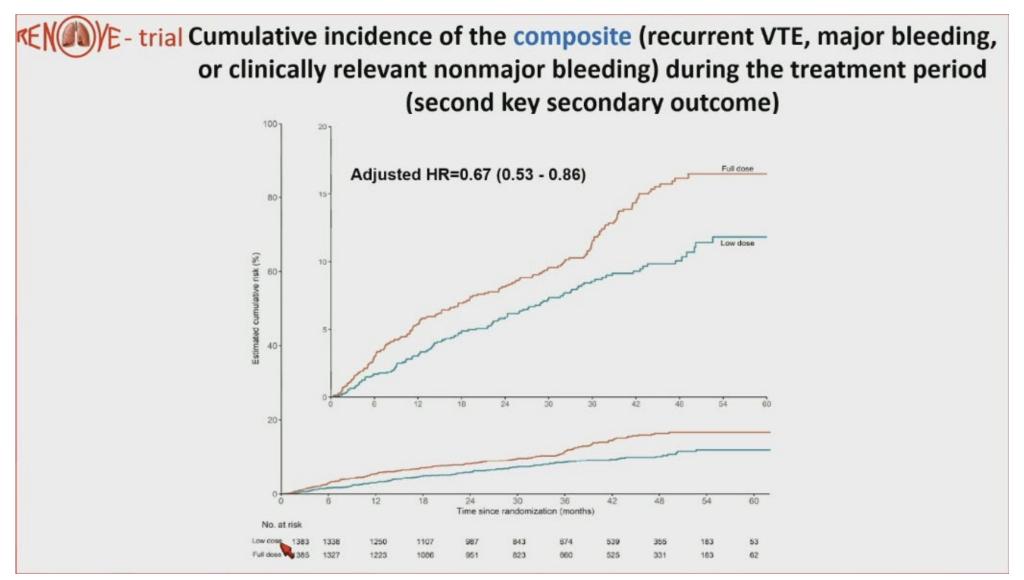






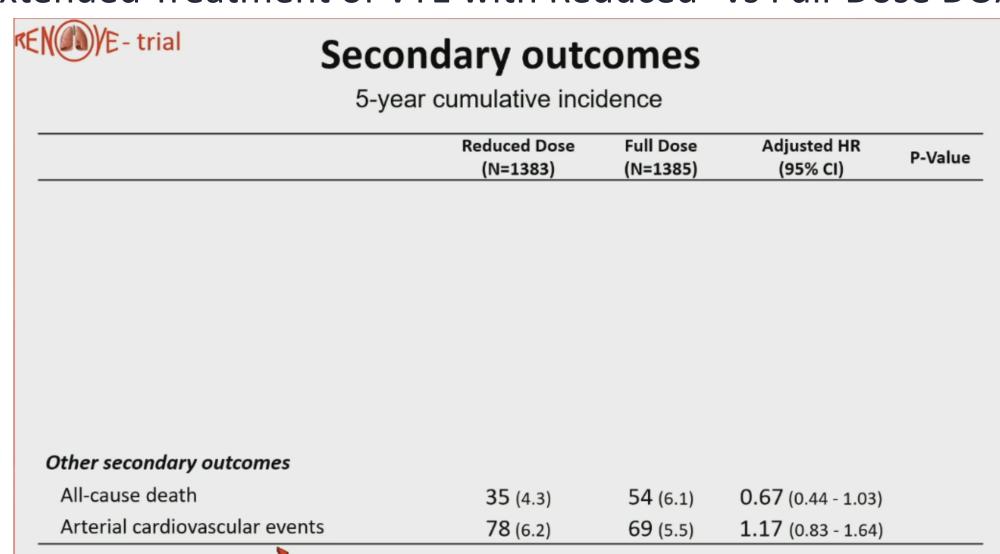


Patients at High Risk of Recurrence.













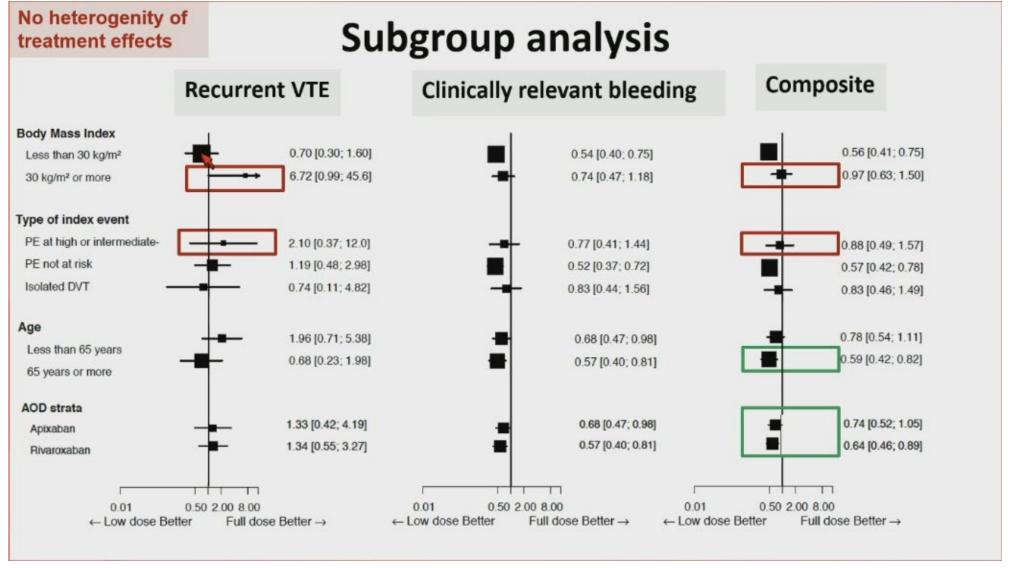


Conclusions

- DOAC dose reduction, in patients with VTE who need extended anticoagulation, did not meet the study noninferiority criteria.
- Rates of recurrent VTE were low in both the reduced- and full-dose groups.
- In the reduced-dose group, clinically relevant bleeding and the composite of recurrent VTE or clinically relevant bleeding were lower than in the full-dose group and did not appear to be offset by an increased risk of death or arterial thromboembolic events.
- These findings will be useful to strengthen future guidelines and enrich shared-decision making process for patients with VTE who need extended anticoagulation.









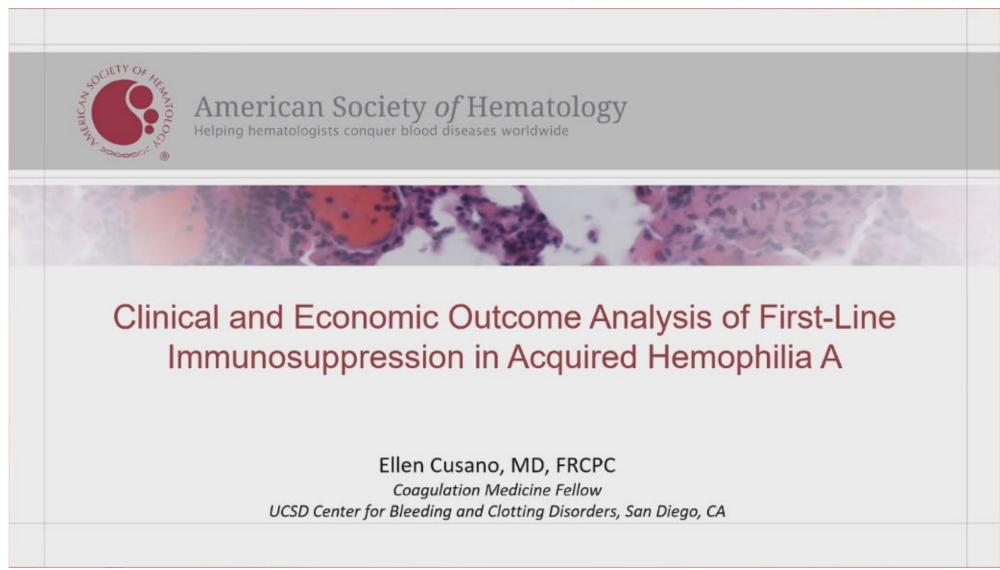
















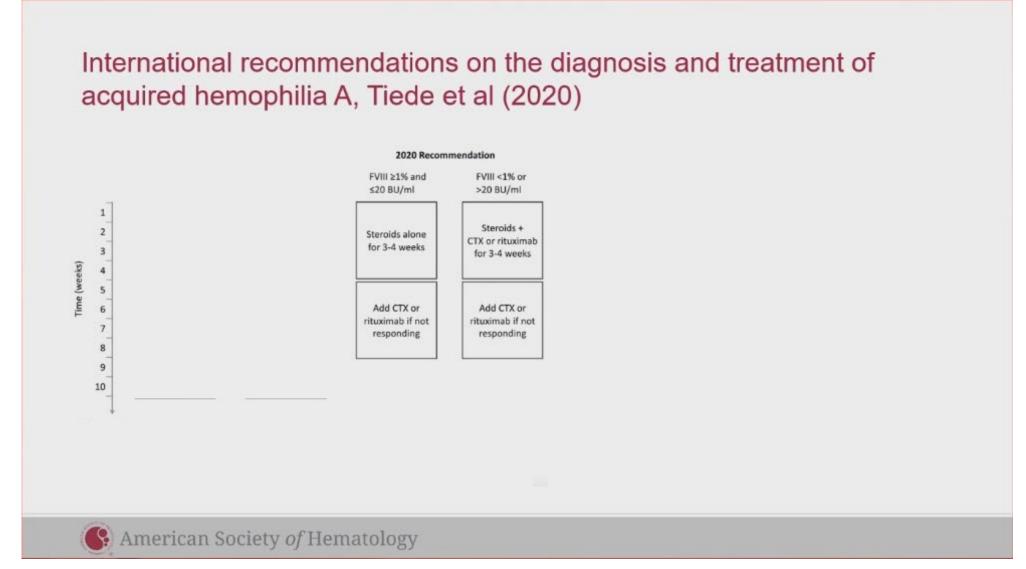
Acquired hemophilia A

- Rare bleeding disorder (1-2 per million per year) in which inhibitory antibodies neutralize factor VIII activity
- Pillars of treatment:
 - Hemostatic therapy to address active bleeding
 - Immunosuppressive treatment to eradicate inhibitors













Objectives

Primary

- Compare the clinical efficacy of first-line rituximab-based IST regimens with other IST regimens
- Compare the safety

Secondary

Compare the economic burden







Study design

National multicenter retrospective cohort







Outcomes

	Entire cohort	Prednisone	Rituximab	Cyclophosphamide	Rituximab + Cyclophosphamide	p-value
Patients, n (%)	126 (100)	33 (26.2)	19 (15.1)	63 (50.0)	11 (8.7)	



CR: complete remission, FVIII level >50%, negative inhibitor, cessation of IST PR: partial remission, FVIII level <50%, negative inhibitor, cessation of IST Persistent inhibitor: FVIII <50%, positive inhibitor, despite IST





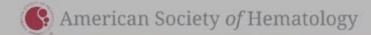
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Patients, n (%)	126 (100)	33 (26.2)	19 (15.1)	63 (50.0)	11 (8.7)	

Treatment response, n (%)						0.563
Complete remission	97 (77.0)	23 (69.7)	15 (78.9)	48 (76.2)	11 (100.0)	

Time to CR/PR, months						0.265
Median (IQR)	3.3 (2.5,4.9)	3.0 (2.3,4.8)	3.1 (2.6,3.7)	3.4 (2.4,5.5)	4.4 (3.3,4.8)	

Proportion of CR highest in combination IST group, lowest in prednisone monotherapy



CR: complete remission, FVIII level >50%, negative inhibitor, cessation of IST PR: partial remission, FVIII level <50%, negative inhibitor, cessation of IST Persistent inhibitor: FVIII <50%, positive inhibitor, despite IST





Outcomes

	Entire cohort	Prednisone	Rituximab	Cyclophosphamide	Rituximab + Cyclophosphamide	p-value
Patients, n (%)	126 (100)	33 (26.2)	19 (15.1)	63 (50.0)	11 (8.7)	
Relapse, n (%)						0.032
Yes	22 (21.4)	11 (45.8)	1 (6.3)	8 (15.4)	2 (18.2)	

Vital status as of last follow-up, n (%)						0.090
Alive	96 (76.2)	23 (69.7)	14 (73.7)	50 (79.4)	9 (81.8)	

Cause of death, n (%)						
Infection	7 (28.0)	0 (0.0)	3 (60.0)	4 (30.8)	0 (0.0)	
Bleeding	1 (4.0)	0 (0.0)	1 (20.0)	0 (0.0)	0 (0.0)	
Unrelated to AHA	14 (56.0)	2 (33.3)	3 (60.0)	9 (69.2)	0 (0.0)	

Lowest relapse proportion in rituximab group Majority of deaths deemed unrelated to AHA





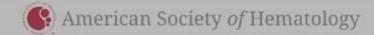


Bleeding events

	Entire cohort	Prednisone	Rituximab	Cyclophosphamide	Rituximab + Cyclophosphamide	p-value
Patients, n (%)	126 (100)	33 (26.2)	19 (15.1)	63 (50.0)	11 (8.7)	

Major 122 (47.1) 31 (43.1) 16 (40.0) 64 (50.4) 11 (55.0)

More major bleeds in cyclophosphamide and combination IST groups





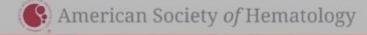


Bleeding events

	Entire cohort	Prednisone	Rituximab	Cyclophosphamide	Rituximab + Cyclophosphamide	p-value
Patients, n (%)	126 (100)	33 (26.2)	19 (15.1)	63 (50.0)	11 (8.7)	

Mean dose of hemostatic or bypassing agent used per bleed (SD)				70-4-70 (100 PM)		100000
rFVIIa (mg)	144.40 (190.51)	96.62 (77.43)	92.89 (151.09)	163.45 (164.06)	253.17 (423.88)	0.297
FEIBA (IU)	79113.15	71950.90	44532.14	93416.46	140403.33	0.153

More rFVIIa and FEIBA used per bleed in cyclophosphamide and combination groups







Cost analysis

	Entire cohort	Prednisone	Rituximab	Cyclophosphamide	Rituximab + Cyclophosphamide	p-value
Patients, n (%)	126 (100)	33 (26.2)	19 (15.1)	63 (50.0)	11 (8.7)	
Total average per patient (\$)	179,961.2	144,605.3	161,569.1	186,974.2	277,631.1	0.145
Mean cost of IST per patient (\$)						
Total	3,481.7	181.5	11,686.0	1,078.3	11,284.0	<0.001





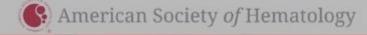


Cost analysis

	Entire cohort	Prednisone	Rituximab	Cyclophosphamide	Rituximab + Cyclophosphamide	p-value
Patients, n (%)	126 (100)	33 (26.2)	19 (15.1)	63 (50.0)	11 (8.7)	

Mean cost of hemostatic treatment per patient (\$)						
rFVIIa	176,170.5	117,876.4	113,324.3	199,411.4	308,863.3	0.297
FEIBA	158,226.3	143,901.8	8,9064.3	186,832.9	280,806.7	0.153

Greater mean cost of hemostatic treatment driven by rFVIIa and FEIBA per patient in those treated with cyclophosphamide or combination IST







Limitations

- Sample size
- Retrospective nature of the study
- Missing information
 - Incomplete or inaccessible charting from up to >1 decade ago
- Change in costs over years not captured, not a one size fits all







Conclusions

- In this Canadian cohort, the proportion of patients achieving CR was highest in the combination group, lowest in the prednisone group, and comparable between rituximab and cyclophosphamide groups
- Those treated with rituximab had lower frequency of relapse, incidence of infection and non-infection grade 3/4 AE compared to regimens containing cyclophosphamide
- Average total treatment costs per patient were lowest in the prednisone and rituximab groups
- Overall, most costs were from hemostatic treatments, not from IST, and differences between regimens may be due to the frequency and severity of bleeding events







Zwei randomisierte Studien - Cyclophosphamid vs Rituximab

Cyclophosphamide vs rituximab for eradicating inhibitors in acquired hemophilia A: A randomized trial in 108 patients

	Prednisone + Cyclophosphamide	Prednisone + Rituximab	P	Odds ratio [95 % CI] ⁺
Complete remission				
All patients — n (%)	N = 58	N = 50		
Month 3	41 (70.7)	34 (68.0)		[0.57;
Patients with poor prognosis i. e., titer > 20 BU/mL and FVIII < 1 IU/dL — n (%)	N = 28	N = 25		
Month 3	21 (75.0)	13 (52.0)	0.0204*	3.97
Time to 1st complete remission — days	N = 45	N = 41		
Median (Q1;	46 (43; 59)	48 (45; 52)		





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Single-dose rituximab plus glucocorticoid versus cyclophosphamide plus glucocorticoid in patients with newly diagnosed acquired hemophilia A: A multicenter, open-label, randomized noninferiority trial

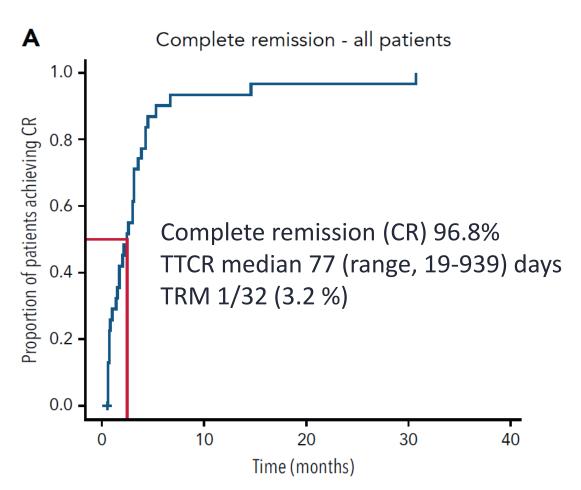
	RTX + Glucocorticoid (n = 31)	CTX + Glucocorticoid (n $= 32$)	p value
Primary endpoint			
CR-no. (%)	24 (77-4)	22 (68-8)	.005
Secondary endpoints			
Median time to CR [IQR]—days	28.0 [20.8, 52.5]	36.0 [23.8, 50.3]	·41

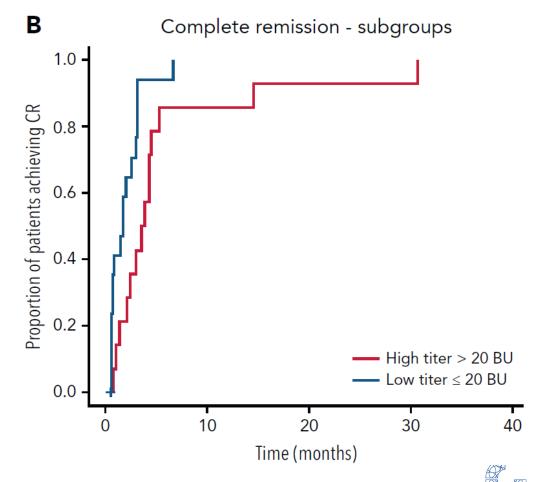




Immunsuppressive Therapie - CyDRi

32 patients with AHA: cyclophosphamide 1000 mg on days 1 and 22 dexamethasone 40 mg on days 1, 8, 15, and 22 rituximab 100 mg on days 1, 8, 15, and 22





Sustained Improvement of Survival in Patients Receiving Emicizumab



Inga M. Schimansky. 555 Sustained Improvement of Survival in Patients Receiving Emicizumab Prophylaxis Instead of Immunosuppression during Early Management of Acquired Hemophilia a (AHA).





Sustained Improvement of Survival in Patients Receiving Emicizumab



GTH Acquired Hemophilia Working Group

Sustained Improvement of Survival in Patients Receiving Emicizumab Prophylaxis Instead of Immunosuppression During Early Management of Acquired Hemophilia A (AHA)

Inga Schimansky, Christiane Dobbelstein, Robert Klamroth, Christina Hart, Ulrich J. Sachs, Richard Greil, Paul Knoebl, Johannes Oldenburg, Wolfgang Miesbach, Christian Pfrepper, Karolin Trautmann-Grill, Patrick Möhnle, Katharina Holstein, and Andreas Tiede

ABSTRACT #555





Infection as a major risk for patients with AHA

	UK^1	EU ²	FR ³	DE/AT ⁴	ES ⁵	NL^6
Year of publication	2007	2012	2013	2015	2021	2021
Fatal bleeding (%)	9.1	4.5	3.5	2.9	3.3	2.9
Fatal infection (%)	11	4.2	12	16	10	7.3





^{1.} Collins PW, et al. Blood 2007; 109: 1870-7

^{2.} Knöbl et al. J Thromb Haemost 2012; 10: 622-31

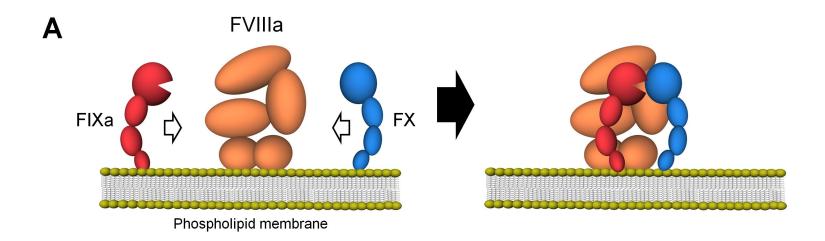
^{3.} Borg et al. Haemophilia 2013; 19: 564-70

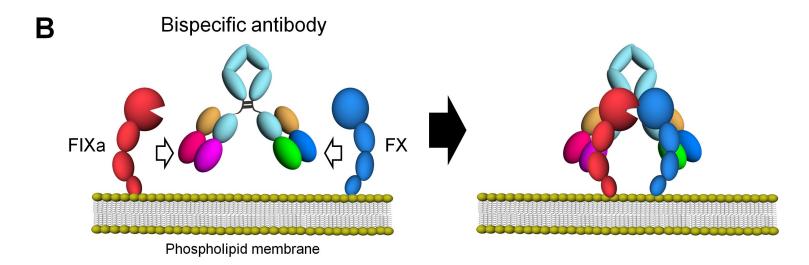
^{4.} Tiede et al. Blood 2015; 125:1091-7

^{5.} Minot-Castellano et al. Blood Adv 2021; 5: 3821-9

^{6.} Schep et al. Am J Hematol 2021; 96: 51-9

Emicizumab





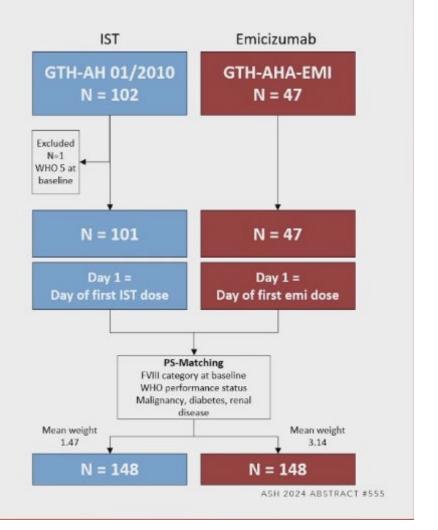




Methods

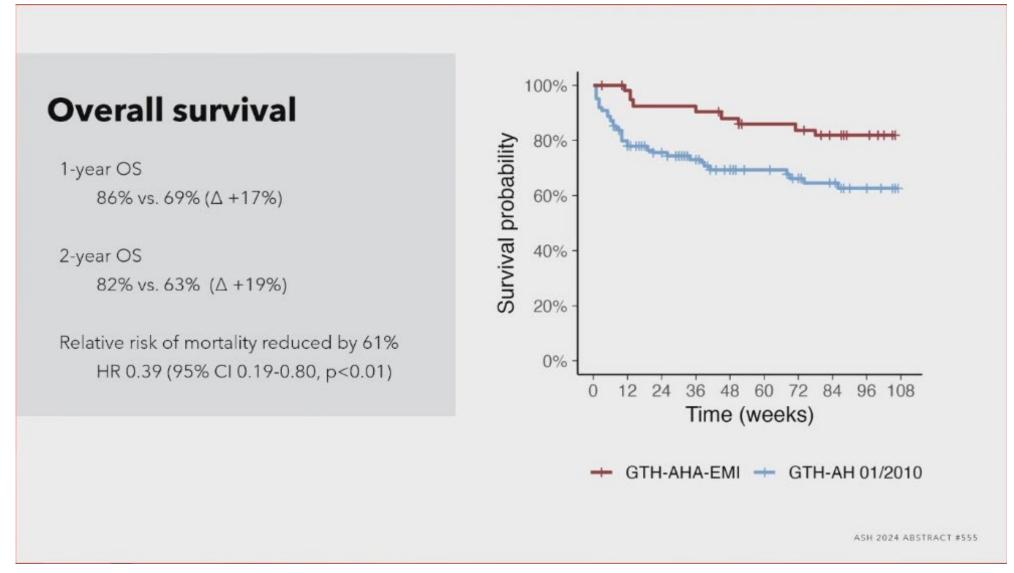
- 2-year follow-up information was collected using an electronic case report form
- Sites reported data from last regular patient visit and additionally planned visits on site or over the telephone
- The matching strategy was predefined in the GTH-AHA-EMI study protocol and already reported for a short-term analysis¹

1. Hart, Klamroth, Sachs et al. J Thromb Haemost. 2024; 22 (10): 2692-2701











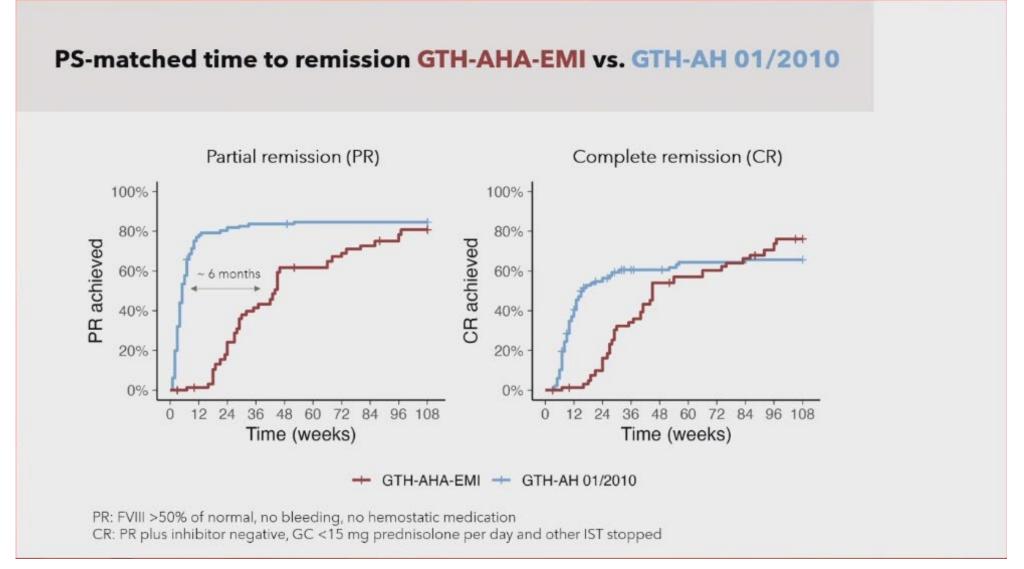


IST in the GTH-AHA-EMI trial

- IST was allowed after week 12
- 2 patients did not receive IST because there were too sick
- 6 patients did not receive IST and achieved spontaneous PR
- 35 patients received IST including:
 - Glucocorticoids (n=25)
 - Rituximab (n=24)
 - Cyclophosphamide (n=6)
 - Mycophenolate mofetil (n=8)

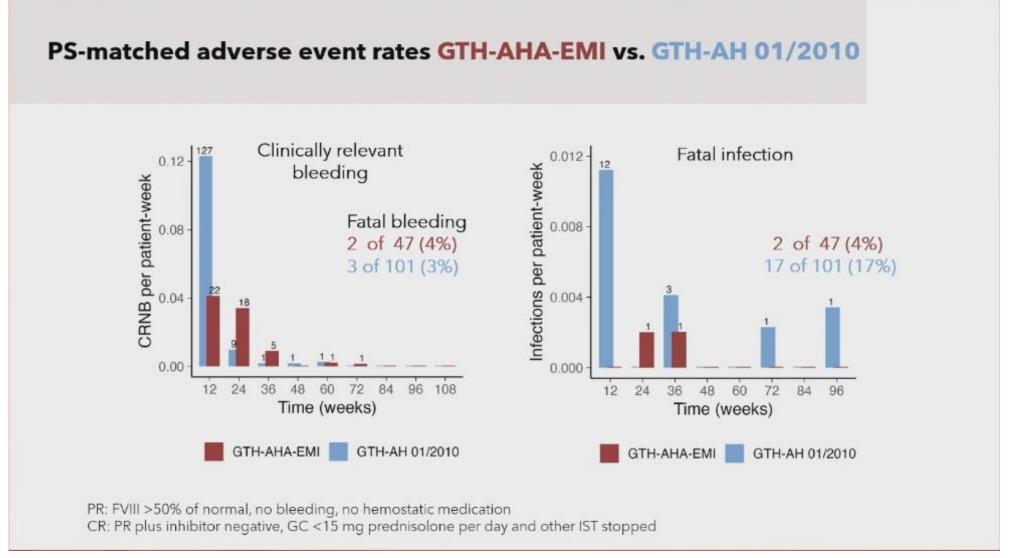
















Summary

- PS-matched comparison of GTH-AHA-EMI (emicizumab, delayed IST) vs.
 GTH-AH 01/2010 (immediate IST) indicated
 - Overall survival improved (+ 19% absolute)
 - Fatal infection reduced (4% vs. 17%)
 - Fatal bleeding similar (4% vs. 3%)
 - Bleeding reduced in weeks 1-12, but relatively increased in weeks 13-24
 - Remission achieved later but in similar proportions at final follow-up
- Spontaneous remission occurred in 6 out of 41 (15%) patients





The possible future treatment paradigm of AHA

Treat acute bleeding

Bypassing agents rFVII, APCC

Porcine recombinant FVIII

Prevent bleeding

Emicizumab prophylaxis

Stabilize patient from acute illness

Stop inhibitor formation

Corticosteroids

Cyclophosphamide

Rituximab and others

rFVII, recombinant factor VIIa (eptacog alfa activated); APCC, activated prothrombin complex concentrate, hFVIII, human FVIII concentrates



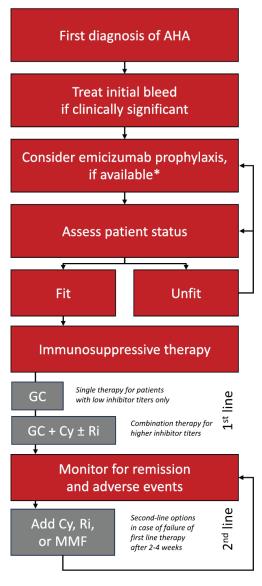


und am Ende....

Vielen Dank für Ihre Aufmerksamkeit



Erworbene Hämophile - Behandlungsalgorithmus







Hämostatische Therapie - Preise



6.204 €

2 - 3 h













	rFVIIa	
	NovoSeven	
Offizieller Preis	0,92 €/μg	
ZE	0,87 €/μg	
NUB		

Erstdosis (75 kg)

Intervalle

APCC
FEIBA
1,77 €/I.E.
1,50 €/I.E.
6.646 € - 13.292 €
8 - 12 h

rpFVIII
Obizur
2,90 €/I.E.
3,41 €/I.E.
43.500 €
HW7 10 h

Emicizumab Hemlibra 64,20 €/mg 60,72 €/mg 43.333 €



7 Tage

