2025 ASH ISTH Guideline on Treatment of Pediatric VTE

Visual Summary of Recommendations

Anticoagulation or No Anticoagulation

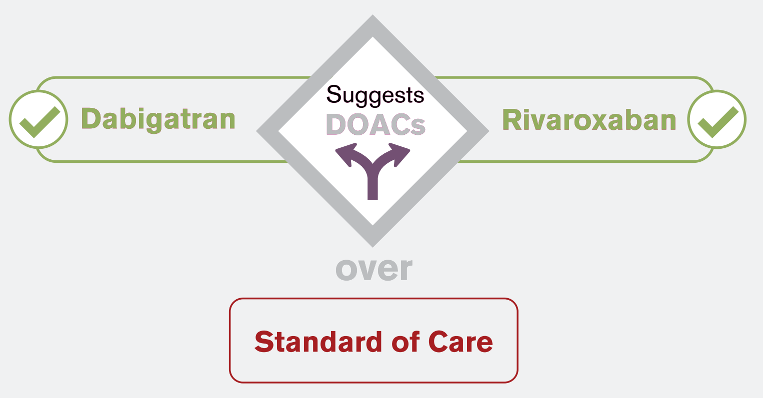
Recommendations comparing *anticoagulation* to *no anticoagulation* for pediatric patients with VTE. Recommendations apply to all pediatric patients (neonates, children, adolescents), unless otherwise specified.

Anticoagulation over no anticoagulation		**Pediatric Patients with VTE**		**No Anticoagulation** over anticoagulation
With and without hemorrhage secondary to venous congestion	✓	**Cerebral Sinovenous Thrombosis**		
Symptomatic DVT or PE	✓	**Deep Vein Thrombosis or Pulmonary Embolism**		
Clinically Unsuspected DVT or PE	✓		✓	Clinically Unsuspected DVT or PE
Children with occlusive or non-occlusive, post-liver transplant or unprovoked PVT	✓	**Portal Vein Thrombosis**	✓	Children with portal hypertension
Neonates with occlusive PVT	✓		✓	Neonates with non-occlusive PVT
High-risk features and low perceived bleeding risk	✓	**Right Atrial Thrombosis**	✓	No high-risk features, unacceptable bleeding risk
Neonates with RVT	✓	**Neonates with Renal Vein Thrombosis**		
Non cannula-related, or in lower limbs from cancer or varicose veins	✓	**Superficial Vein Thrombosis**	✓	Cannula-related, in the upper limb

CSVT: *Cerebral Sinovenous Thrombosis* ***DVT:*** *Deep Vein Thrombosis* ***PE:*** *Pulmonary Embolism* ***PVT:*** *Portal Vein Thrombosis*
RAT: *Right Atrial Thrombosis* ***RVT:*** *Renal Vein Thrombosis* ***SVT:*** *Superficial Vein Thrombosis*

Direct Oral Anticoagulants

Recommendations comparing use of DOACS *(Dabigatran or Rivaroxaban)* to standard of care anticoagulants *(LMWH, VKA, UFH, Fondaparinux)* for pediatric patients with VTE.



✓ Dabigatran

Suggests DOACs

Rivaroxaban ✓

over

Standard of Care

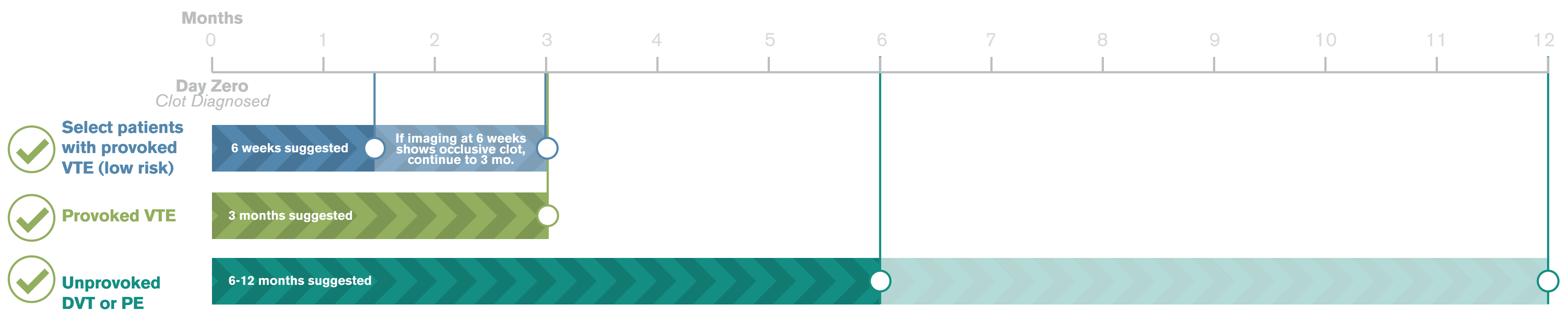
Patient groups/factors in which a DOAC should **NOT** be used or used **with great caution**:

- gut absorption issues, chronic or temporary
- recent surgery
- liver disease
- kidney disease (GFR < 30 mL/min) severe enough to cause a coagulopathy
- anti-phospholipid syndrome
- pre-term neonates
- active cancer

DOAC: *Direct Oral Anticoagulants* ***LMHW:*** *Low molecular weight heparin* ***VKA:*** *Vitamin K Antagonist* ***UFH:*** *Unfractionated heparin*

Duration of Anticoagulation

Recommendations comparing *durations of anticoagulation* use for pediatric patients with VTE.

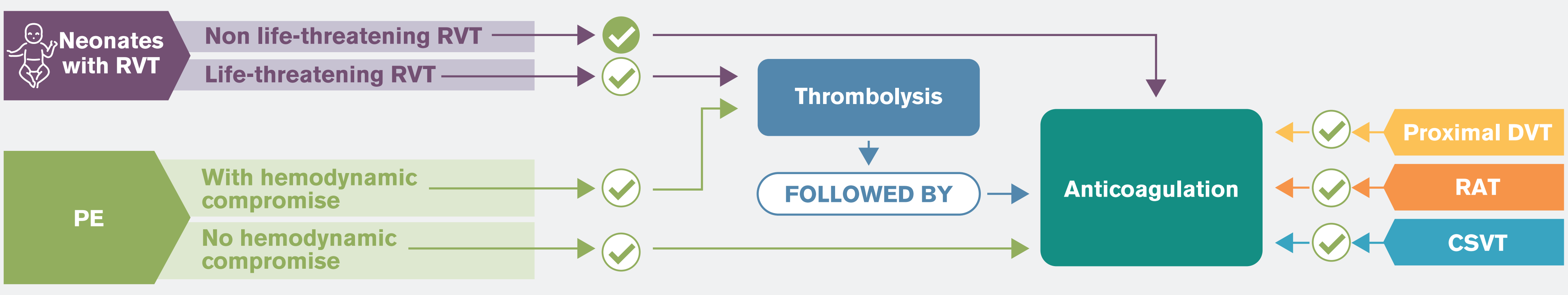


Select patients with provoked VTE (low risk) excludes most patients with provoked VTE: (i) PE, (ii) recurrent VTE, (iii) persistent occlusive thrombus at 6 weeks, (iv) cancer-associated thrombosis, (v) patients with persistent antiphospholipid antibodies or major thrombophilia and (vi) ongoing VTE risk factors.

DVT: *Deep Vein Thrombosis* ***PE:*** *Pulmonary Embolism* ***VTE:*** *Venous Thromboembolism*

Thrombolysis

Recommendations comparing thrombolysis followed by anticoagulation to anticoagulation alone for pediatric patients with VTE. Recommendations apply to all pediatric patients (neonates, children, adolescents), unless otherwise specified.



Neonates with RVT

Non life-threatening RVT ✓

Life-threatening RVT ✓

PE

With hemodynamic compromise ✓

No hemodynamic compromise ✓

Thrombolysis

FOLLOWED BY

Anticoagulation

✓ Proximal DVT

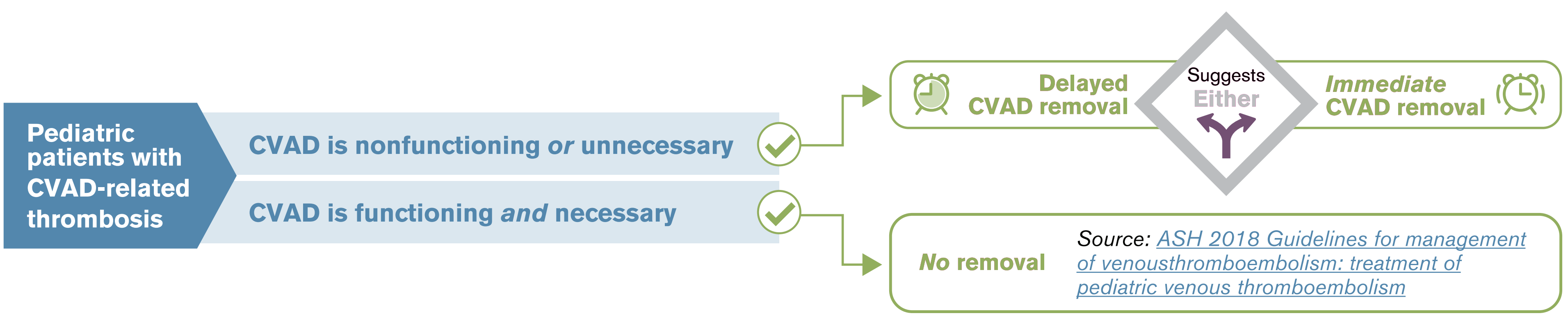
✓ RAT

✓ CSVT

CSVT: *Cerebral Sinovenous Thrombosis* ***DVT:*** *Deep Vein Thrombosis* ***PE:*** *Pulmonary Embolism* ***RAT:*** *Right Atrial Thrombosis* ***RVT:*** *Renal Vein Thrombosis*

CVAD Removal

Recommendations comparing delayed removal of a CVAD to immediate removal of a nonfunctioning or unneeded CVAD in pediatric patients with CVAD-related thrombosis.



Pediatric patients with CVAD-related thrombosis

CVAD is nonfunctioning *or* unnecessary ✓

CVAD is functioning *and* necessary ✓

Delayed CVAD removal

Suggests Either

Immediate CVAD removal

No removal

Source: *ASH 2018 Guidelines for management of venousthromboembolism: treatment of pediatric venous thromboembolism*

CVAD: *Central Venous Access Device*

Learn more about the 2025 ASH Clinical Practice Guidelines on Treatment of Pediatric VTE at *hematology.org/VTE*

	Recommendation Strength			
	Recommends… ✓	**Recommends against…** ✗	**Suggests…** ✓	**Suggests against…** ✗
	INTERPRETATION OF STRONG RECOMMENDATIONS		**INTERPRETATION OF CONDITIONAL RECOMMENDATIONS**	
Patients	Most individuals in this situation would want the recommended course of action, and only a small proportion would not.		Most individuals in this situation would want the suggested course of action, but many would not. Decision aids may be useful in helping patients to make decisions consistent with their individual risks, values, and preferences.	
Clinicians	Most individuals should follow the recommended course of action. Formal decision aids are not likely to be needed to help individual patients make decisions consistent with their values and preferences.		Different choices will be appropriate for individual patients; clinicians must help each patient arrive at a management decision consistent with the patient's values and preferences. Decision aids may be useful in helping individuals to make decisions consistent with their individual risks, values, and preferences.	
Policymakers	The recommendation can be adopted as policy in most situations. Adherence to this recommendation according to the guideline could be used as a quality criterion or performance indicator.		Policymaking will require substantial debate and involvement of various stakeholders. Performance measures should assess if decision making is appropriate.	
Researchers	The recommendation is supported by credible research or other convincing judgments that make additional research unlikely to alter the recommendation. On occasion, a strong recommendation is based on low or very low certainty in the evidence. In such instances, further research may provide important information that alters the recommendations.		The recommendation is likely to be strengthened (for future updates or adaptation) by additional research. An evaluation of the conditions and criteria (and the related judgments, research evidence, and additional considerations) that determined the conditional (rather than strong) recommendation will help identify possible research gaps.	

Evidence Certainty	
High Certainty	
⊕⊕⊕⊕	We are very confident that the true effect lies close to that of the estimate of the effect.
Moderate Certainty	
⊕⊕⊕○	We are moderately confident in the effect estimate: the true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.
Low Certainty	
⊕⊕○○	Our confidence in the effect estimate is limited: the true effect may be substantially different from the estimate of the effect.
Very Low Certainty	
⊕○○○	We have very little confidence in the effect estimate: the true effect is likely to be substantially different from the estimate of effect.

REFERENCE

Monagle P, Azzam M, Bercovitz R, et al. American Society of Hematology/International Society of Thrombosis and Haemostasis 2025 updated guidelines for treatment of venous thromboembolism in pediatric patients. *Blood Advances*. doi: *https://doi.org/10.1182/bloodadvances.2024015328*