Women with a first unprovoked venous thromboembolism with a HERDOO2 score of 0 or 1 can safely discontinue anticoagulation after 5 to 12 months of treatment

Question

In women with unprovoked venous thromboembolism (VTE), is the HERDOO2 scoring system a useful predictor of the risk of recurrent VTE?

The study

Who? This prospective study included 2,747 adults with a first unprovoked venous thromboembolism (proximal deep vein thrombosis or pulmonary embolism) who had completed 5 to 12 months of anticoagulation.

What? The study assessed the accuracy of the HERDOO2 score in predicting the risk of recurrent VTE at 1 year after discontinuation of anticoagulation in women deemed to be at low risk of recurrence based on a HERDOO2 score (0 or 1).

HERDOO2 predictor	Scoring
H: Hyperpigmentation of either leg **E:** Edema of either leg **R:** Redness of either leg	1 point (if any present)
D: D-dimer (Vidas) > 250 µg/L while on anticoagulation	1 point
O: Obesity (BMI > 30 kg/m^2)	1 point
O: Older (age > 65 years)	1 point

Interpretation of scores:

Score ≥2: high risk of recurrence and should continue anticoagulation

Score 0 or 1: low risk of recurrence and can discontinue anticoagulation.

What the researchers found

Women with a first unprovoked VTE and a HERDOO2 score of 0 or 1 had a low risk of recurrent VTE (3% per patient-year, 95% confidence interval 1.8% to 4.8%).

The bottom line

Women with HERDOO2 scores of 0 or 1 have a low risk of recurrent VTE and can be offered discontinuation of anticoagulation; those with a score of ≥2 are considered high risk and should continue anticoagulation. All men should continue anticoagulation.

Summary of findings

Risk of recurrent VTE in the first year after an unprovoked VTE

Risk classification based on HERDOO2 score	Anticoagulation status	Number of people (% of study population)	Recurrence rate per patient-years (95% confidence interval)
Women at high risk (score ≥ 2) and all men	Continued anticoagulation	1802 (66)	1.6% (1.1% to 2.3%)
	Discontinued anticoagulation	323 (12)	8.1% (5.2% to 11.9%)
Women at low risk (score 0 or 1)	Discontinued anticoagulation	591 (21)	3.0% (1.8% to 4.8%)
	Continued anticoagulation	31 (1)	No recurrence

This Evidence Summary is based on the following article:

Rodger MA, Le Gal G, Anderson DR, et al. ***Validating the HERDOO2 rule to guide treatment duration for women with unprovoked venous thrombosis: multinational prospective cohort management study.*** *BMJ. 2017 Mar 17;356:j1065. PubMed (https://www.ncbi.nlm.nih.gov/pubmed/28314711?dopt=Abstract)*

50% of women with unprovoked VTE could be spared life-long anticoagulation

Patients with an unprovoked VTE have a high risk of recurrent VTE (about 30% at 5 years). Thus, guidelines suggest life-long anticoagulation for these patients.[1] However, among these patients, the risk of recurrent VTE varies considerably depending on patient factors (e.g., age, BMI, evidence of venous stasis changes on physical exam) and laboratory factors (e.g., D-dimer level). Therefore, clinicians often face the challenge of identifying which patients can safely stop anticoagulation after 3 to 6 months of therapy and which patients should continue anticoagulation life-long.

This large, prospective cohort study, involving 44 centers in 7 countries, validated the HERDOO2 score. About half of the women with an unprovoked VTE were classified as having a low risk of recurrent VTE and could discontinue anticoagulation. Therefore, life-long anticoagulation, as suggested by the guidelines, could be avoided in women with a low HERDOO2 score.

This study has some limitations. The definition of “unprovoked” included patients who had VTE associated with a minor or weak risk factor (e.g., estrogen therapy). This group generally has a lower risk of VTE recurrence compared with patients with no risk factors and their inclusion likely reduced the overall recurrence rate. Second, the HERDOO2 rule was applied in women after 5 to 12 months of treatment rather than the usual first decision point at 3 months. It is unclear if the score is still valid if applied at 3 months. In addition, the duration of follow-up was limited to 1 year. Finally, a single D-dimer test at a low cutoff value was used for all patients. Other studies have suggested repeating a D-dimer level one month after discontinuing anticoagulant therapy to ensure it remains negative.[2] Furthermore, there are many different D-dimer assays; the HERDOO2 results with the VIDAS assay should not be applied to another assay without validation either in the literature or locally.

The HERDOO2 score does not apply to patients with any of these risk factors at the time of the VTE: surgery within the past 4 weeks, immobilization >3 days, leg injury, active cancer, high-risk thrombophilia, or pregnancy.

When talking with women with an unprovoked VTE who have received anticoagulation for 5 to 12 months, management options now include stopping the anticoagulant if the HERDOO2 score is 0 or 1 (using the VIDAS D-dimer assay), switching to a prophylactic dose of a direct oral anticoagulant (DOAC) (e.g., rivaroxaban, apixaban), which provides a high level of protection with low bleeding risk, or continuing standard dose anticoagulants (if there are other risk factors that are not included in the HERDOO2 score or due to patient preference).

Doctor, I have finished 6 months of anticoagulant treatment. Can I stop now?

Men: You have a high risk of recurrence; therefore, we recommend that you continue anticoagulation to protect you from having another blood clot.

Women: You may be able to stop your anticoagulant. We will use a score that includes a combination of your age, height and weight, the appearance of the skin on your legs, and the results of a blood test to determine if it is safe for you to stop.

1. Kearon C, Akl EA, Comerota AJ, Prandoni P, et al. Antithrombotic therapy for VTE disease: Antithrombotic Therapy and Prevention of Thrombosis, 9th ed: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines. Chest 2012; 141(2 Suppl): e419S-e496S.

2. Kearon C, Spencer FA, O'Keeffe, Parpia S, Schulman S, Baglin T, Stevens SM, Kaatz S, Bauer KA, Douketis JD, Lentz SR, Kessler CM, Moll S, Connors JM, Ginsberg JS, Spadafora L, Julian JA; D-dimer Optimal Duration Study Investigators. Ann Intern Med. 2015; 162 (1): 27-34.

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