# Risk factors for recurrent venous thromboembolic events: data from real-world prospective registry

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## Background

Following cessation of anticoagulant medication, individuals with spontaneous index events reportedly have a greater incidence of recurrent venous thromboembolism (VTE). Numerous factors have been suggested to increase the risk of recurrence; identifying and targeting these traits could be helpful to prevent recurrence of VTE incidents.

## Objectives

The purpose of this study was to investigate the relationship between recurrence of VTE and particular risk factors, such as body mass index, hormone medication, and history of thrombophilia.

## Methods

Between May 2013 and September 2023, a real-world cohort of patients diagnosed with pulmonary embolisms (PE) were the subject of our analysis. The patients who had a history of a single VTE occurrence were compared to the patients who had recurrent VTEs, which were defined as two or more PE and/or deep vein thrombosis (DVT) incidents. For statistical analysis we employed chi-square test, and a p-value of 0.05 was considered statistically significant.

## Figure 1.

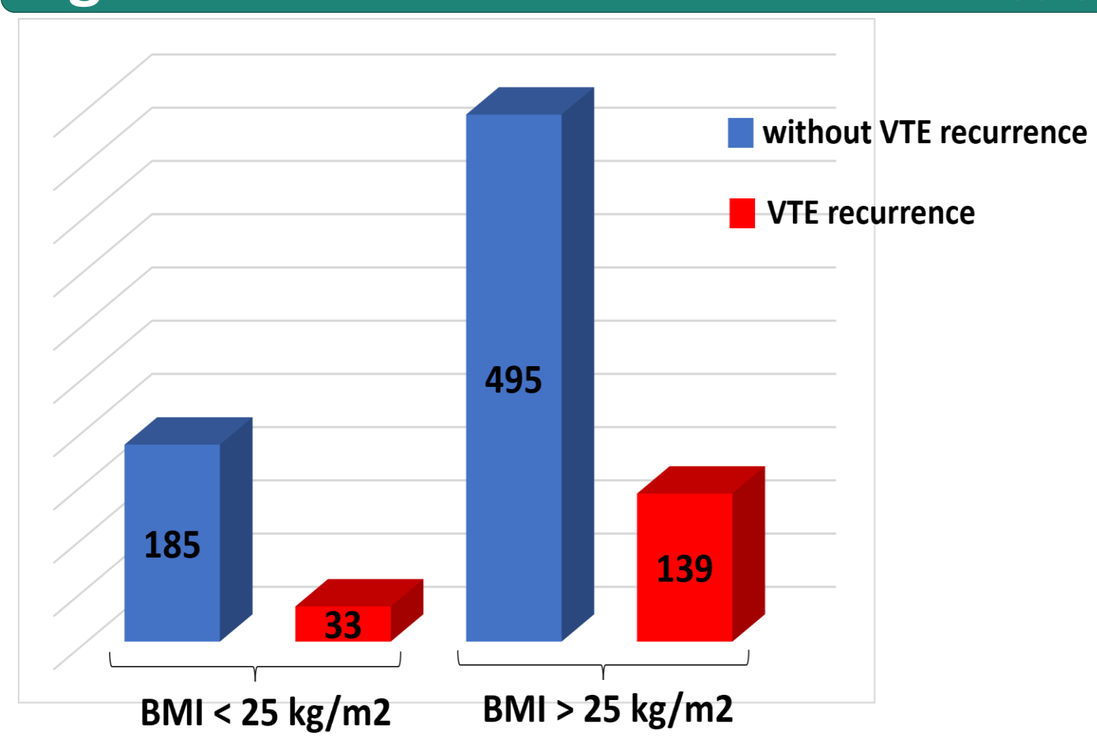


Figure 1. Patients with BMI greater than 25 kg/m2 were more likely to experience VTE recurrence. BMI=body mass indeks; VTE= venous thromboembolic event.

## Figure 2.

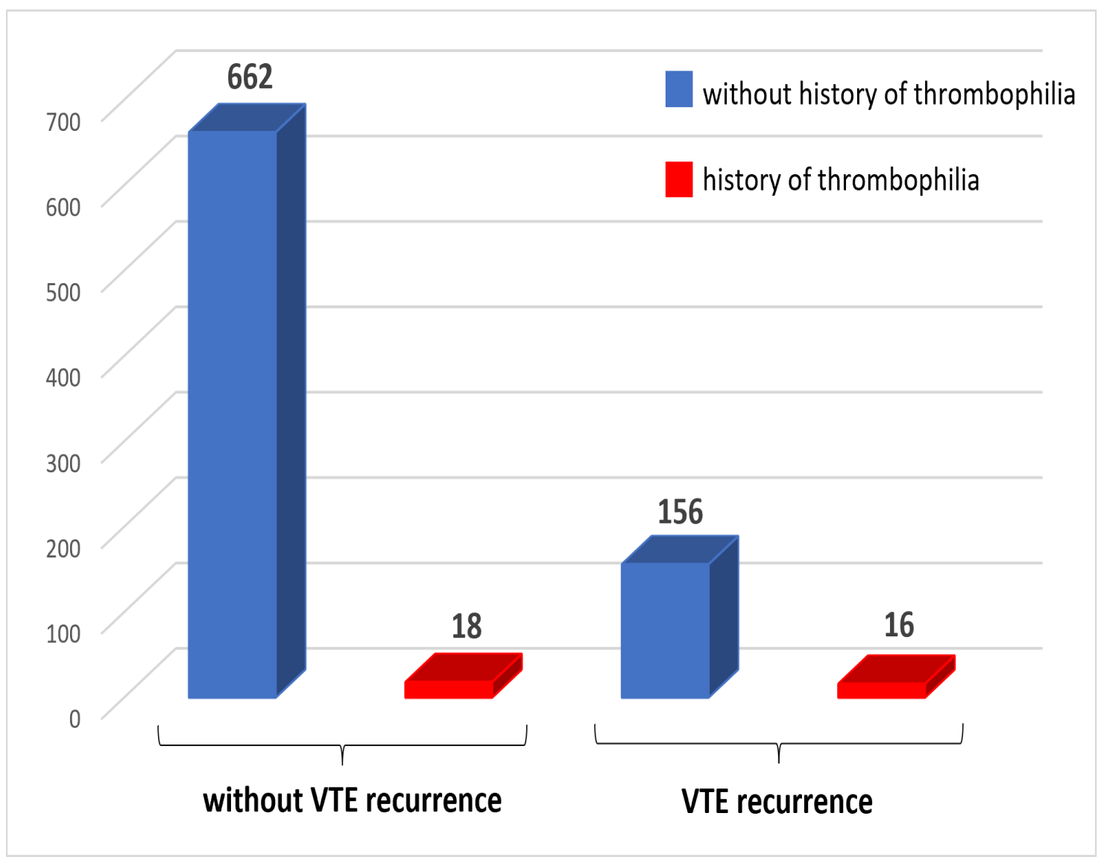


Figure 2. Patients with history of thrombophilia were more likely to experience VTE recurrence. VTE= venous thromboembolic event.

## Results

This registry-based study included 852 patients with a median age of 73 years (IQR 61-80) and a median follow-up period of 1732 days (IQR 460.25-2604.75). A total of 172 patients had recurrent VTE events (20%). All-cause mortality rates between the two groups of patients did not differ. History of thrombophilia was associated with a higher rate of recurrent VTE events ($p$ =.000068). Patients who were overweight or obese (BMI greater than 25 kg/m2) were more likely to experience recurring VTE, though this outcome was only marginally significant ($p$ =.03). Recurrence of VTE did not appear to be linked to hormonal therapy.

## Conclusion

Our research indicates that a higher body mass index and inherited thrombophilia are linked to recurrent episodes of venous thromboembolic events. In individuals without any other known predisposing factors, efforts to diagnose thrombophilia following an index VTE event and to encourage weight loss in overweight and obese patients may be crucial in preventing recurrent VTE episodes.

**Keywords**: recurrent thromboembolic incident, thrombophilia, body mass index

**Literature**

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