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Siblings of those with blood clots in leg have higher risk of same disorder

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Siblings of those who have been hospitalized with potentially lethal blood clots in the legs or pelvis are more likely to also suffer the disorder than those with healthy siblings, according to research published in *Circulation: Journal of the American Heart Association.*

The Swedish study is the first to show a direct correlation between venous thromboembolism (VTE) and family risk in a nationwide setting, sorted by age and gender.

VTE consists of deep vein thrombosis (DVT), which typically involves blood clots that form in the deep veins of the leg or pelvis, and its complication, pulmonary embolism (PE), a blood clot that travels to the lungs and lodges within the pulmonary arteries.

"Hereditary factors — as determined by sibling history — are significant in determining the risk of venous thromboembolism in men and women between the ages of 10 and 69," said Bengt Zöller, M.D., Ph.D., senior study author and associate professor at the Center for Primary Health Care Research, Lund University in Malmö, Sweden. "More importantly, in a fraction of the families we studied, the risk for venous thromboembolism was unusually high — 50 to 60 times higher than those families who were not at risk, thus suggesting a strong genetic risk factor."

While the risk was two times greater for those with one sibling with VTE, the risk rose to 50 times greater for those with two or more

siblings with the disorder.

Researchers compiled information from nationwide Swedish registries in 1987-2007, including the Hospital Discharge Register and the Swedish Multigeneration Register. They identified 45,362 hospitalized cases of VTE. Patients were ages 10 to 69 (48.5 percent male; 51.5 percent female), an average 50.7 years for men and 46.6 years for women. Of the total number of cases, 2,393 — or 5.3 percent — showed a sibling history for the disease.

Researchers also noted that:

- For men and women 10-19 years old with a sibling history of the disease, the risk was almost five times greater than for those without a sibling history.
- For those aged 60-69, the risk was twice as great for those with a sibling history.
- Age differences among siblings had little impact on the disorder, which indicates there was no major familial environmental effect.
- While sibling and non-sibling incidence rates increased exponentially for both sexes, overall it was higher for women than for men, especially between ages 10-40. However, after age 50, the incidence rate was higher for men.

In examining the risk for people with a spouse who had venous thromboembolism versus those with spouses who didn't, researchers found only a slight increased risk for venous thromboembolism. Thus, most of the familial risk may be due to genetics rather than family environmental factors, researchers said.

VTE is the third most common cardiovascular illness after stroke and heart attack, affecting one in 1,000 people each year, researchers said.

"Our study underscores the potential value of sibling history as a predictor of the risk of venous thromboembolism," Zöller said. "Further research is needed to uncover the sources of genetic and non-genetic occurrences of VTE."

Provided by American Heart Association