

Trial clarifies which patients with acute pulmonary embolism can be managed at home

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Patients with acute pulmonary embolism can be selected for home management using the sPESI score or the Hestia criteria, according to results of the HOME-PE trial presented in a Hot Line session today at ESC Congress 2020.

Principal investigator Professor Pierre-Marie Roy of the University Hospital of Angers, France said: "The pragmatic Hestia method was at least as safe as the sPESI score for triaging haemodynamically stable pulmonary [embolism patients](#) for [outpatient care](#)."

Acute pulmonary embolism is the most severe presentation of venous thromboembolism (VTE). Incidence is approximately 60 to 70 per 100,000 people, but increases with age, in [cancer patients](#), during prolonged bedrest or after surgery. It occurs when a blood clot, usually in veins of the legs, travels to the right side of the heart and blocks the pulmonary arteries. The most frequent symptoms are acute dyspnoea and chest pain. In severe cases, patients may develop acute right heart failure with shock and, sometimes, [sudden death](#).

Apart from haemodynamically unstable patients requiring specific management, treatment is mainly based on anticoagulation to avoid recurrence of pulmonary embolism and allow natural fibrinolysis. However, anticoagulation increases the risk of bleeding. Historically, hospitalisation was justified due to the risks of recurrence and bleeding.

In the last decade, several studies have demonstrated the possibility of home treatment for selected haemodynamically stable patients. But controversy persists about the optimal referral strategies and [eligibility criteria](#) for outpatient care.

European guidelines recommend the Pulmonary Embolism Severity Index (PESI) score or the simplified PESI score (sPESI) to assess the risk of all-cause mortality. Patients with an sPESI score of 0 can be treated at home, providing that proper follow-up and anticoagulant therapy can be provided. American guidelines do not require a predefined score, and advise using pragmatic criteria such as those in the Hestia Study.

The HOME-PE trial examined whether a strategy based on the Hestia criteria was at least as safe as a strategy based on the sPESI score to select patients for home treatment. In addition, it evaluated whether the Hestia method was more efficient compared to the sPESI score—in other words, whether it led to more patients being selected for home treatment.

This was a randomised, open-label non-inferiority trial comparing the two triaging strategies. It was conducted in 26 hospitals in France, Belgium, the Netherlands and Switzerland, which had set up, prior to study initiation, a thrombosis team for outpatient care of patients with acute pulmonary embolism.

In 2017 to 2019, 1,974 patients with normal blood pressure presenting to the emergency department with acute pulmonary embolism were included. Patients randomised to the sPESI group were eligible for outpatient care if the score was 0; otherwise they were hospitalised. Patients randomised to the Hestia group were eligible for outpatient care if all 11 criteria were negative; otherwise they were hospitalised. In both groups, the physician in charge could overrule the decision on treatment

location for medical or social reasons.

The primary outcome was a composite of recurrent VTE, major bleeding, and all-cause death within 30 days. The Hestia strategy was non-inferior to the sPESI strategy: the primary outcome occurred in 3.8% of the Hestia group and 3.6% of the sPESI group ($p=0.005$).

A greater proportion of patients were eligible for home care using sPESI (48.4%) compared to Hestia (39.4%). However, the doctor in charge of the patient overruled sPESI more often than Hestia. Consequently, a similar proportion of patients were discharged within 24 hours for home treatment: 38.4% in the Hestia group and 36.6% in the sPESI group ($p=0.42$). All patients managed at home had a low rate of complications.

Professor Roy said: "These results support outpatient management of [acute pulmonary embolism](#) patients using either the Hestia method or the sPESI score with the option for physicians to override the decision. In hospitals organised for outpatient management, both triaging strategies enable more than a third of pulmonary embolism patients to be managed at home with a low rate of complications."

More information: Abstract title: Hospitalization or outpatient management of patients with acute pulmonary embolism - HESTIA versus simplified PESI: an international multicentre randomized controlled study (HOME-PE study).

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