Persistent lung perfusion defect is a risk factor for recurrent venous thromboembolism after pulmonary embolism

Dr. Alexis 12732 Ferré alexis.ferre@voila.fr MD 1,2, Dr. Benjamin 12733 Planquette benjamin.planquette@egp.aphp.fr MD 1,2,3, Dr. Amandine 12734 Vial amandine.vialdupuy@gmail.com MD 1,2, Dr. Antoine 12735 Roux antoine.roux@egp.aphp.fr MD 1,2, Prof. Joseph 12736 Emmerich joseph.emmerich@egp.aphp.fr MD 1,3,4, Prof. Guy 12738 Meyer guy.meyer@egp.aphp.fr MD 1,2,3, and Dr. Olivier 12754 Sanchez olivier.sanchez@egp.aphp.fr MD 1,2,3. 1 Université Paris Descartes, Sorbonne Paris Cité, Paris, France; 2 Service de Pneumologie et Soins Intensifs, Hôpital Européen Georges Pompidou, Paris, France; 3 INSERM U 765, Faculté de Pharmacie, Paris, France and 4 Service de Médecine Vasculaire, Hôpital Européen Georges Pompidou, Paris, France.

Body: Introduction. Up to 50% of patients with pulmonary embolism (PE) still have lung perfusion defects after 6 months of anticoagulant treatment, but little is known about the risk of recurrence in patients with persistent perfusion defect after an acute PE. Aim of the study. To assess the risk of recurrent venous thromboembolism (VTE) in patients with persistent lung perfusion defects after a first episode of PE. Patients and methods. Consecutive patients given at least 3 months of anticoagulant for an objectively proven first episode of acute PE were included. Ventilation/perfusion (V/Q) lung scan was performed 6 to 12 months after the diagnosis of PE. Objectively proven recurrent deep vein thrombosis (DVT) and PE were registered during follow-up. Persistent perfusion defects were defined as a pulmonary vascular obstruction > 10% on the V/Q lung scan. Results. 318 patients (mean age 58 ± 19 years) with an acute PE were included. 63 (19.8%, 95% CI, 15.4-24.2%) had persistent perfusion defects. During follow-up (median duration: 51 months [25th 75th percentiles: 27 - 73 months]), 71 patients (22%) had a recurrent episode of VTE. In multivariate analysis, persistent defect (HR 2.22; 95% CI, 1.3-3.75; p =0.0048), unprovoked PE (HR 3.48; 95% CI, 1.96-6.19; p<0.0001), persistent risk factor for VTE (HR 2.64; 95% CI, 1.08-6.48; p<0.0001) and age ([60 to 75] years; HR 1.88; 95% CI, 1.0-3.61; p=0.0112) were identified as independent risk factors for recurrent VTE whereas prolonged anticoagulation was a protecting factor (HR 0.19; 95% CI, 0.07-0.54; p=0.0001). Conclusion. Persistent perfusion defect is an independent risk factor for recurrent VTE after a first episode of PE.