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penetrance of HCM seems to be higher in the male population and in MYH7 rather than in other genes mutation carriers. Mutations carriers at a preclinical stage without hypertrophy may have individual risk factors of sudden cardiac death. Further study of a larger population may be useful to confirm these results.

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### Pulmonary Embolism in Covid-19 patients: A French Multicentre Cohort Study



C. Fauvel<sup>1,\*</sup>, O. Weizman<sup>2,3</sup>, A. Trimaille<sup>4</sup>, D. Mika<sup>5</sup>, N. Pace<sup>2</sup>, A. Douair<sup>6</sup>, E. Barbin<sup>7</sup>, A. Fraix<sup>2</sup>, O. Bouchot<sup>6</sup>, O. Benmansour<sup>7</sup>, G. Godeau<sup>8</sup>, Y. Mecheri<sup>7</sup>, R. Le Bourdon<sup>9</sup>, C. Yvorel<sup>10</sup>, B. Duceau<sup>3</sup>, W. Sutter<sup>3</sup>, V. Waldmann<sup>3,11</sup>, G. Bonnet<sup>3,11</sup>, A. Cohen<sup>12</sup>, T. Pezel<sup>13</sup>

<sup>1</sup> Rouen University Hospital, Rouen

<sup>2</sup> Centre Hospitalier Régional Universitaire de Nancy, Vandoeuvre-Les-Nancy

<sup>3</sup> Université de Paris, PARCC Inserm, Paris

<sup>4</sup> Nouvel Hôpital Civil, Centre Hospitalier Régional Universitaire de Strasbourg, Strasbourg

<sup>5</sup> Université Paris-Saclay, Inserm, UMR-S1180, Chatenay-Malabry

<sup>6</sup> Centre Hospitalier Annecy Genevois, Epagny Metz-Tessy

<sup>7</sup> Centre Hospitalier Régional de Orléans, Orléans

<sup>8</sup> Institut Cardiovasculaire Paris Sud, Massy

<sup>9</sup> Centre Hospitalier Universitaire de Bordeaux, Bordeaux

<sup>10</sup> Centre Hospitalier Universitaire de Saint Etienne, Saint-Priest-En-Jarez

<sup>11</sup> Hôpital Européen Georges Pompidou, Université de Paris

<sup>12</sup> Saint Antoine Hospital, Paris, France

<sup>13</sup> Lariboisière hospital, APHP, University of Paris, Paris, France

\* Corresponding author.

E-mail address: [charles.fauvel@orange.fr](mailto:charles.fauvel@orange.fr) (C. Fauvel)

**Background** While pulmonary embolism (PE) appears to be a major issue in Covid-19, data remain sparse.

**Purpose** We aimed to describe the risk factors and baseline characteristics of patients with PE in a large cohort of Covid-19 patients.

**Methods** In a retrospective multicentric observational study, we included consecutive hospitalised patients for Covid-19. Patients without computed tomography pulmonary angiography (CTPA)-proven PE diagnosis, those who were directly admitted to an intensive care unit (ICU), and those still hospitalised without PE experience were excluded.

**Results** Among 1240 patients (58.1% men, mean age  $64 \pm 17$  years), 103 (8.3%) patients had PE confirmed by CTPA. The ICU transfer requirement and mechanical ventilation requirement were significantly higher in the PE group ( $P < 0.001$  and  $P < 0.001$ , respectively). In a univariable analysis, traditional venous thromboembolic risk factors were not associated with PE ( $P > 0.05$ ), while patients under therapeutic-dose anticoagulation before hospitalisation or prophylaxis-dose anticoagulation introduced during hospitalisation had lower PE occurrence (OR 0.40, 95%CI(0.14-0.91);  $P = 0.04$  and OR 0.11, 95%CI(0.06-0.18);  $P < 0.001$ , respectively). In a multivariable analysis, the following variables (also statistically significant in univariable analysis) were associated with PE: male gender (OR 1.03, 95%CI(1.003-1.069);  $P = 0.04$ ), anticoagulation with prophylaxis-dose (OR 0.83, 95%CI(0.79-0.85),  $P < 0.001$ ) or therapeutic-dose (OR 0.87, 95%CI(0.82-0.92),  $P < 0.001$ ), C-reactive protein (OR 1.03, 95%CI(1.01-1.04),  $P = 0.001$ ) and time from symptom onset to hospitalisation (OR 1.02, 95%CI(1.006-1.038),  $P = 0.002$ ) (Table 1).

**Conclusion** Pulmonary embolism risk factors in Covid-19 context do not include traditional thromboembolic risk factors but rather

Table 1 Multivariable analysis for prediction of PE occurrence.

	Odds Ratio	95 %CI	P value
Male	1.03	1.003-1.069	0.04
Age	1.00	1.00-1.00	0.52
Smoking	0.96	0.91-1.00	0.08
Malignancy	0.98	0.93-1.03	0.46
Venous thromboembolic disease	1.03	0.96-1.09	0.43
Time from illness onset to hospitalisation, days	1.02	1.006-1.038	0.002
C-reactive protein	1.03	1.01-1.04	0.001
Anticoagulation prophylaxis-dose	0.83	0.79-0.85	< 0.001
Anticoagulation therapeutic-dose	0.87	0.82-0.92	< 0.001

independent clinical and biological findings at admission, including a major contribution to inflammation.

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### Coronary artery calcium score assessment in patients with familial hypercholesterolemia



E. Béard<sup>1</sup>, C. Brusq<sup>1</sup>, F. Seguro<sup>2</sup>, D. Ferrières<sup>2</sup>, J. Ruidavets<sup>1</sup>, V. Bongard<sup>1</sup>, J. Ferrières<sup>2,\*</sup>

<sup>1</sup> Department of Epidemiology, Health Economics and Public Health, University of Toulouse III

<sup>2</sup> Cardiologie B, Fédération de Cardiologie CHU Rangueil Toulouse, Toulouse, France

\* Corresponding author.

E-mail address: [jean.ferrieres@univ-tlse3.fr](mailto:jean.ferrieres@univ-tlse3.fr) (J. Ferrières)

**Background** In the 2019 ESC/EAS guidelines for the management of dyslipidaemias, coronary artery calcium (CAC) score assessment may be considered as a risk modifier. It seems that CAC score is often very low in patients younger than 45 with severe familial hypercholesterolaemia (FH).

**Purpose** We assessed the relationship between CAC score and FH.

**Methods** Analysis was based on patients consecutively referred to a Department of Preventive Cardiology and having a CAC score assessed ( $n = 1402$ ). FH was diagnosed using the modified version of the Dutch Lipid Clinic Network (DLCN). LDL-C was corrected for patients under statin or ezetimibe using dose- and statin- or ezetimibe-specific correction factors. FH was considered as definite, probable, possible or unlikely for a total  $> 8$ , equal to 6–8, 3–5 or  $< 3$  points, respectively.

**Results** DLCN score was assessed in 1157 patients. CAC score was significantly associated with DLCN score: 21%, 29%, 18%, and 32% of the patients with FH (DLCN score for definite or probable FH;  $n = 38$ ) versus 39%, 29%, 18% and 14% of the patients without FH (DLCN score for possible or unlikely FH;  $n = 1119$ ) had a CAC score equal to 0, 1-100, 101-400 and  $> 400$ , respectively ( $P = 0.009$ ). Factors independently associated with a CAC  $> 400$  were age, male gender, diabetes mellitus, hypertension, lipid-lowering treatment and definite or probable FH. Among patients with FH  $< 45$  years, CAC was  $> 0$  for 40% of patients. Among patients with FH, 11% had premature CVD and 68% were treated. Mean corrected LDL-C was 9.8 mmol/L ( $\pm 2.3$ ) and 4.1 mmol/L ( $\pm 1.3$ ) in patients with and without FH, respectively ( $P < 0.0001$ ). None of the patients with FH reached the LDL-C goal. In patients with FH that were not treated, 67% had a