

Long-term major adverse cardiovascular events after COVID-19 infection: a clinical score from a cohort of 2575 patients enrolled in the multicenter international HOPE 2 registry

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Background: Long-term consequences of COVID-19 infection are still partly known. According to some studies several patients may experience long term symptoms; however, predictors of long-term major adverse cardiovascular events among (MACE) patients with previous COVID-19 infection are .

Aim of the study: To derive a simple clinical score for risk prediction of long-term MACE among patients with previous covid-19 infection.

Methods: 2575 consecutive patients were enrolled in a multicenter, international registry (HOPE-2) from February 2020 to April 2021, and followed-up at long-term. A risk score was developed using a stepwise multivariable regression analysis.

Results: Out of 2575 patients enrolled in the HOPE-2 registry, 1481 (58%) were male, with mean age of 60±16 years. At long-term follow-up overall rate of MACE was 7.9% (202 of 2545 pts, 3.3% death, 2.4% inflammatory myocardial disease, 1.3% arterial thrombosis, 0.7% venous throm-

bosis). After multivariable regression analysis, independent predictors of MACE were used to derive a simple prognostic score: The HOPE-2 prognostic score may be calculated by giving: ½ point for every 10 years of age, 2 points for previous cardiovascular disease, 1 point for increased troponin serum levels during hospitalization, 2.5 points for heart failure and 3 points for sepsis during hospitalization, -1.5 points for vaccination at follow-up. Score accuracy at receiver operating characteristic curve analysis was 0.81.

Stratification into 3 risk groups (0–2, 3–5, and >5 points) classified into low, intermediate and high risk. The observed MACE rates were 0.5% for low-risk patients, 4% for intermediate-risk patients, and 19.5% for high-risk patients (log-Rank $p < 0.001$, Figure 1).

Conclusions: The HOPE-2 prognostic score may be useful for long-term risk stratification in patients with previous COVID-19 infection. High-risk patients may require a strict cardiological follow-up.

