

The very long-term risk of Stroke after Acute Coronary Syndrome and geographic differences. The ABC-10* Study on Heart Disease.

mahmoud, cordiano, palmieri, cavuto, bagato, mattia, david, menegon, stefania petucco, berton.

Keywords: Stroke Risk, Acute Coronary Syndrome, Urban-Rural.

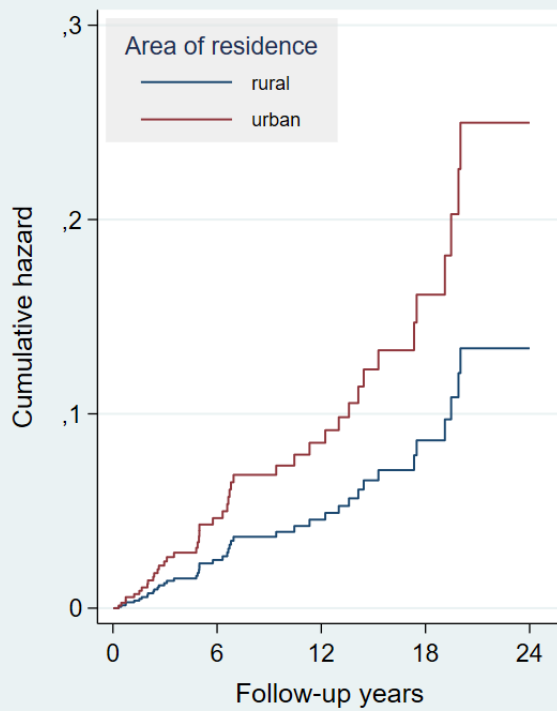
Background: Little is known about the very long-term risk of stroke among acute coronary syndrome (ACS) survivors.

Methods: In this prospective study, we enrolled 535 ACS patients admitted to hospitals in three Italian provinces, discharged alive and followed for 24 years or death. The patient's residency was classified into three urban and three nearby rural areas.

Results: All patients completed the follow-up (6142 Person-years). 85 (16%) patients suffered an acute stroke. Patients median age was 67 years, 70% were male, and 318 patients were residing in rural areas. Patients who had a stroke and those who had not shared most of the demographic and clinical characteristics. The incidence rate of overall stroke was 14/1000 person-year. Cox analyses showed older age (HR 3.13;95%CI 2.31-4.26), male gender (HR 1.88;95%CI 1.20-2.95), baseline diabetes (HR 2.25 95%CI 1.37-3.69), heart failure (HR 2.69;95%CI 1.71-4.24), and higher albumin/creatinine ratio (HR 1.75;95%CI 1.33-2.30) were all associated with an increased risk of stroke. while higher baseline eGFR, reperfusion, statin and beta-blockers treatment during follow-up were associated with a decreased risk; HR (0.55 (95%CI 0.42-0.72), 0.45(95%CI 0.29-0.71), 0.21(95%CI 0.13-0.34), and 0.37(95%CI 0.23-0.57), respectively). In the multivariate analysis, only older age (HR1.55;95%CI 1.08-2.21; p=0.02) was an independent predictor of stroke while statin treatment was independently associated with a lower risk (HR 0.35;95% CI 0.21-0.58; p<0.0001). However, all these variables did not predict the risk of stroke in competing risk regression analysis where death was treated as the competing event. A sub-analysis of the 43 patients who had a fatal stroke (FS) revealed 7/1000 person-year FS IR. The Cox regression and competing risk analyses of predictors of FS showed similar results. Interestingly, we observed an association between geographic areas of residence and the long-term FS risk as the risk increased going from rural to urban (HR 2.08;95%CI 1.14-3.80; p=0.02) areas and from north to middle and south provinces (HR 1.47;95%CI 1.00-2.15; p=0.04) in the univariate Cox regression analysis. Results kept true using multivariate Cox and Competing risk regression models.

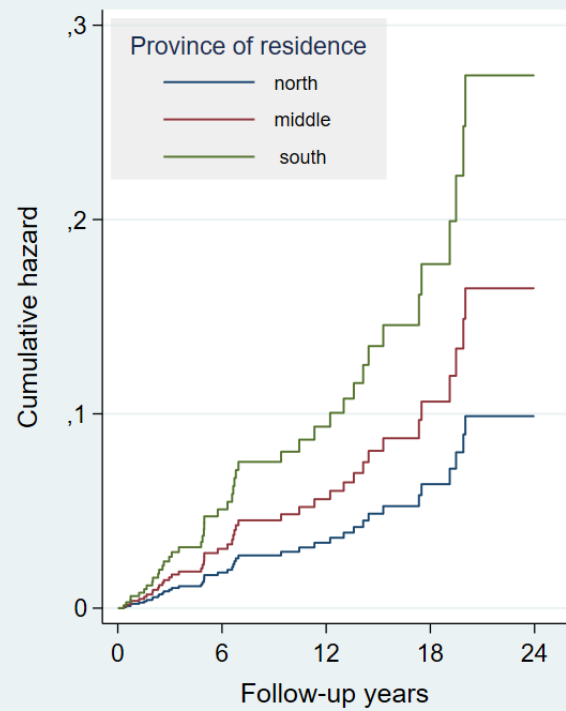
Conclusion: This analysis reveals the significant urban-rural difference in the long-term risk of fatal stroke among unselected ACS patients which highlights the importance of implementing a preventive policy based on area-specific knowledge.

Cox proportional hazards regression of stroke mortality



HR=1.9 (95%CI 1.0-3.5); p=0.04*

* fully adjusted model



HR=1.7 (95%CI 1.1-2.5); p=0.01*