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Hypertension, albuminuria and fatal stroke long after acute coronary syndrome – the ABC study on acute coronary syndrome

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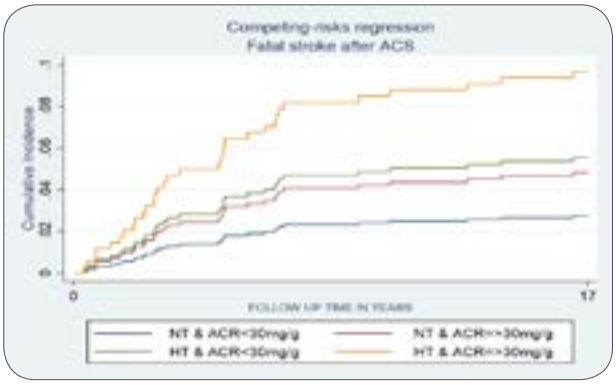
Statement of the Problem: Systolic blood pressure (SBP) is a well-known important predictor of stroke risk. Likewise, there is a significant and independent association between microalbuminuria and subsequent stroke risk.

Purpose: The purpose of this study is to assess the combined effect of hypertension and microalbuminuria on the risk of fatal stroke in patients with acute coronary syndrome (ACS) through 17 years of follow–up.

Methodology & Theoretical Orientation: The present study includes 589 patients with AMI enrolled in three intensive coronary care units and discharged alive. Baseline, clinical and laboratory data were recruited within the first 7 days of hospitalization. We used a competitive risk regression models to assess the risk of developing fatal stroke. Analyses were made using STATA 14.

Findings: After discharge, 33 (5.6%) of the patients developed fatal stroke (FS), comparing them to the patients who didn't; there was no significant difference in the clinical characteristics except that they were significantly older (mean age was 72.5±7.8 vs. 65.3±11.9 years, p=0.0007) and more frequently hypertensive patients (67% vs. 46% p=0.02). In patients with FS, 3rd day albumin-creatinine ratio (ACR) values were significantly higher (p=0.001) and microalbuminuria was more prevalent 55% vs. 32%, (p=0.004). At univariable competitive risks regression; hypertensive patients had higher risk of develop FS, hazard ratio (HR)=2.3 (95% CI=1.1–4.7) p=0.02. Similar HRs were observed after an adjusted model for age gender and hospital site was set HR=2.1 (95% CI=1.0–4.4) p=0.04. In the adjusted model, patients with both hypertension and microalbuminuria showed an independent risk association for developing FS than patients with neither, HR=3.6 (95% CI=1.3–10.3) p=0.01.

Conclusion & Significance: This study, show that the combination of hypertension and microalbuminuria is associated with a greater risk of development of fatal stroke long after ACS, independently of degree of heart failure and other confounders.



Recent Publications

1. Lee M, Saver J L, Chang K H, Liao H W, Chang S C and Ovbiagele B (2010) Impact of microalbuminuria on incident stroke a meta-analysis. Stroke 41:2625-2631.
2. Brown David W, Wayne H Giles and Kurt J Greenlund (2007) Blood pressure parameters and risk of fatal stroke, NHANES II mortality study. American Journal of Hypertension 20(3):338-341.

3. Ninomiya T, Perkovic V, Verdon C, Barzi F, Cass A, Gallagher M, Jardine M, Anderson C, Chalmers J, Craig J C and Huxley R (2009) Proteinuria and stroke: a meta-analysis of cohort studies. American Journal of Kidney Diseases 53(3):417-425.
4. G Berton, R Cordiano, R Palmieri, F Cucchini, R De Toni and P Palatini (2001) Microalbuminuria during acute myocardial infarction: a strong predictor for one-year mortality. Eur Heart J 22:1466-75.
5. G Berton, R Cordiano, S Mbaso, R De Toni, P Mormino and P Palatini (1998) Prognostic significance of hypertension and albuminuria for early mortality after acute myocardial infarction. J Hypertension 16:525-530.

Biography

Giuseppe Berton is a Consultant Cardiologist at Conegliano General Hospital, Italy. His main interest is on acute coronary syndrome and long term prognosis. Even pathophysiology of hypertension and heart failure belong to his interest. With his groups he focuses on endothelium dysfunction, acute inflammatory process and markers of prognosis. He is deeply keen on bio-statistic chiefly on survival analysis. He is responsible of the project, The ABC study on heart disease: in 1992, a little group of medical researchers and other participants embarked on a project to investigate new clinical factors for heart disease, studying patients with acute coronary syndrome and following them for many years. Today, the observations on the long-term survival after acute coronary syndrome are internationally acknowledged. Main results appear on the most important cardiovascular texts across the world. The study is called the ABC heart disease study.

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