

4th International Conference on Clinical & Experimental Cardiology

April 14-16, 2014 Hilton San Antonio Airport, TX, USA

Association of significant myocardial stunning and cerebro- and cardiovascular events among acute aneurysmal subarachnoid hemorrhage patients

Augusto Parra

University of Texas Health Science Center, USA

Objective: To study the influence of moderate to severe left ventricular dysfunction [SLVD] from myocardial stunning in increasing the risk of cerebrovascular and cardiovascular events among patients with acute aneurysmal subarachnoid hemorrhage [aSAH].

Methods: A subset of 119 patients (from an prospective cohort of 481 aSAH) with at least one echocardiogram, serial transcranial Doppler [TCD] data, and with no prior history of cardiac disease and or left ventricular dysfunction [LVD] was analyzed. LVD's cutoff was a LVEF of < 40%. The study population for cardio- and cerebrovascular events, and functional outcome and the most predicable Troponin I cut-off for SLVD and role of delayed vasospasm increasing the likelihood of cerebral ischemic injury in the presence of SLVD were assessed.

Results: SLVD was found in 11% of our study-patients. Younger age, hydrocephalus, and complete filling of the quadrigeminal and fourth ventricles were associated with SLVD (all $P < 0.05$). None of the patient's taking antihypertensive medications developed SLVD in our study population. There was a significant association between SLVD and infarction from vasospasm after adjusting for clinical grade, age and peak TCD mean velocities (surrogate for delayed vasospasm severity) ($P = 0.03$). SLVD was also a significant predictor for cardiogenic shock ($P = 0.001$), and pulmonary edema ($P = 0.002$). However, a significant association between SLVD and 14 -day functional outcome in study population was not found.

Conclusions: SLVD after aSAH increases the risk of ischemic cerebrovascular events (especially if significant delayed vasospasm occurs), cardiogenic shock, and pulmonary edema. We were unable to find a significant association of SLVD and 14-day functional outcome or mortality. The later could be explained by the benefits of specialized Neuro-ICU support and an underpowered study population to detect this specific association. Antihypertensive medication appears to be cardio-protective for the development of SLVD after aSAH (myocardial stunning).

Biography

Augusto Parra graduated from the University del Bosque Medical School (Bogotá-Colombia) in 1988. He obtained an MPH in Biostatistics/Epidemiology from Harvard University in 1992. He pursued clinical training in Neurology and Internal Medicine at Duke University. He completed a Fellowship in Neurocritical Care and Stroke at Duke University in 2001. He is a Neurocritical Care Faculty at Columbia University and at the University of Texas-SA, where he currently directs the Neuro-ICU Program. He has done basic and clinical research, published in the leading scientific medical journals, done editorial peer review, and has been part of the American Heart Association-Brain 1 Basic Science Grant Review Committee for several years. He has special research interest in the repercussions of brain injury into the cardiovascular system and vice versa.

parraa3@uthscsa.edu