**INFLAMMATORY CYTOKINES, IL-1 AND TNF-A, ARE CLUE FOR DETERMINING STROKE ETIOLOGY WITH THE SUSCEPTIBILITY VESSEL SIGN ON MRI**

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**Objective:** It is unclear whether clot composition analysis including inflammatory cytokines, is helpful to predict a stroke mechanism in acute large vessel occlusion. In addition, the relationship between early vessel signs on imaging studies and clot compositions has been poorly understood.

**Method:** We performed molecular analysis of intracranial clots retrieved by mechanical thrombectomy from 82 patients with acute stroke. Seventy-two of these patients underwent GRE imaging before endovascular therapy. We measured the relative expression of inflammatory mediators by performing the quantitative real-time polymerase chain reaction on the retrieved clots and assessed associations between the expression of inflammatory mediators and stroke subtypes as well as with GRE SVS.

**Results:** Classifications of stroke etiology for the cohort were as follows: cardioembolism (51, 62.2%), large artery atherosclerosis (9, 11%), and undetermined etiology (22, 26.8%). Clots associated with large artery atherosclerosis showed significantly higher interleukin (IL)-1*β* expression than clots from both cardioembolism and undetermined etiology (*P* = 0.008). A positive SVS was identified in 48 of 72 patients (66.7%) who had GRE imaging. IL-1*β*, tumor necrosis factor-*α*, and matrix metalloproteinase-9 expressions were significantly higher in clots with a negative SVS than in those with a positive SVS (*P* = 0.010, 0.049, and 0.004, respectively).

**Conclusion:** Expression of inflammatory mediators in intracranial clots differs significantly based on stroke etiology or presence or the absence of SVS on GRE imaging. This study suggests that molecular analysis of inflammatory mediators in retrieved clots is a promising tool for determining stroke mechanism in acute ischemic stroke patients.