

UNDERREPRESENTATION OF RIGHT MIDDLE CEREBRAL INFARCT: A STATISTICAL PARAMETRIC MAPPING

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A few study has been suggested that left hemispheric ischemic stroke is more frequent than right hemispheric stroke. However, the underlying mechanism for this observation is unclear. To decipher this issue, in the present study, we statistically compared the topological distribution of right and left MCA infarct attributable to large artery disease. We consecutively enrolled 2669 patients with first-ever acute ischemic strokes who admitted to the participating 11 hospitals within seven days after symptom onset. Voxel-wise statistical comparison between right and left MCA infarct was performed by Voxel Based Morphometry approach. Using SPM, each registered lesion images were smoothed with Guassian kernel with 10 pixel-wide FWHM. Mean age was 68 ± 13 and 57% were male. The incidence of infarct in left MCA territory was more frequent than that of right (321 vs. 409, $p = 0.001$ by Chi-square test). However, infarct volume were larger in patients with right MCA infarct compared to those with left MCA infarct (log-transformed infarct volume 0.37 vs. 0.13, $p = 0.001$ by Mann-Whitney U test). In voxel-wise comparison, the more frequent area of right MCA infarct than that of left was middle temporal gyrus. In addition, the more frequent areas of left MCA infarct than that of right were Broca's area and superior temporal gyrus. We found that infarct volume were larger in patients with right MCA infarct compared with those with left MCA infarct. Finally, insular involvement is more commonly seen in patients with left MCA infarct.