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**The Second Affiliated Hospital of Air Force Medical University**

**Science and Technology Innovation Development Fund**

## **Statistical analysis plan**

Protocol Title: Integrated image strategy of head and neck CTA combined with multimodal MRI to assess the risk of cerebrovascular disease

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## **Statistical analysis**

1.3D-ASL statistical analysis: Double-sample T-test was used for statistical analysis of the preprocessed perfusion images. The mean value of total cerebral perfusion in each subject was used as a covariable in the statistical analysis to exclude individual differences in total cerebral perfusion. AFNI ([HTTP; Multiple comparison correction for AlphaSim in //afni.nimh.nih.gov/](http://afni.nimh.nih.gov/)). AlphaSim correction was performed by MonteCarlo simulation. Side connection was used in the continuity standard, and the brain mask size was 91 mm. When  $P=0.01$  was set as the threshold and the minimum size of the block was set to 125 pixels, the minimum correction result for to was obtained. The results are expressed in MNI coordinate system.

2. rs-fMRI statistical analysis: Pearson correlation analysis was used to calculate the time signal correlation coefficient (R value) between each study object's seed region (bilateral hippocampus) and each region of the whole brain, and then the R value was converted into a Z value with close to normal distribution by fishery-Z transform, representing the connection strength between two brain regions.