

# Cerebral micro bleeds among patients with chronic vessels disease of brain

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## Background

Mongolia has been ranked high in brain stroke. Strokes in Mongolia are fallen into the following categories: 39% hemorrhagic stroke, 27% ischemic stroke, 21% SAH, 13% TIA.

The domestic ratio of hemorrhagic and ischemic stroke 1.5:1.0 is far different than the international ratio 1:4. 83.4% of total hemorrhagic stroke patients received surgical treatment.

Since we established a stroke unit in Ulaanbaatar city in 2013, we treated 50 patients with tPA treatment. While 41 of those patients had occlusion in the MCA, 1 case in the ACA, 3 case in the CCA, 2 case in the BA, and 3 patients with ischemic stroke in the PCA of brain. 5.3% of total patients with ischemic stroke were enrolled in the tPA treatment. However, Mongolia has very high brain hemorrhage percentage, the incidents of ischemic stroke has been also increasing. If we look into the main causes of the ischemic stroke, 32.7% is due to atherosclerosis of a large vessel, 20% is due to small vessels disease, 11.1% is due to cardiac embolic stroke, 34.9% is related to joint disorders, and 0.7% is due to specific disorders, as well as 0.5% remained unknown.

## Purpose:

To study cerebral micro bleeds among patients with chronic vessels disease of brain.

## Methodology:

We enrolled the patients with chronic vessels disease of brain and employed SWI software of MRI in our study.

## Research flow:

Sample of this study consists from 60 patients with age range from 44 to 78, 40 of whom are female and 20 is male. We divided our sample into two groups; first group has 35 patients with high blood pressure and chronic hypertension encephalopathy. Second group has 25 patients with normal blood pressure and with TIA attack.

Two of the first group patients had hemorrhagic stroke, while rest of patients had chronic hypertension encephalopathy. Three patients of the second group had Ischemic stroke, while rest of the patients had chronic vessels disease. Results of the MRI test indicate that patients of the first group had multi

number of micro bleeding in the rear part of the brain, preventricular part, basal ganglia, thalamus, while patients of the second group had micro bleeds in their pons and middle brain, in the preventricular part of the brain. Results show that all patients to have gliosarosis changes in two brain sides, in the preventricular area. While all, patients of the first group used to take the anti - thrombotic drugs, 22 patients of the second group used to take the anti - thrombotic drugs.

### **Predominant Location of MBs**

<b>№</b>	<b>Location of MBs</b>	<b>%</b>
1	Brain stem	50
2	Cerebellum	50
3	Basal ganglia	62.5
4	Occipital lobe	58
5	Preventricular region	55
6	Subcortical	56

All patients exhibited gliosarosis changes , 8 patients had hemorrhage, and 2 had Ischemic stroke. Lacunar infarction is 62.5%.

### **Results:**

While patients who have chronic hypertension encephalopathy, had micro bleeding in their preventricular region, basal ganglia and occipital lobe of the brain, the patients with chronic vessels disease had micro bleeds usually in the brain stem and basal ganglia of the their brain. Those patients were also diagnosed to have cerebral chronic micro and macro angiopathy diseases.

### **Discussion:**

1. Micro bleeding characteristics are related to degeneration changes and amyloid angiopathy changes of the small arteries.
2. Micro bleeding changes can be also related to usage of anticoagulant and anti thrombotic treatment.
3. Our results also suggest that we should be careful in conducting tPA treatments in the patients with ischemic stroke.

**Keywords:** Hemorrhage, ischemic stroke, gliosarosis change, microbleeds