



Title	Cerebral perfusion parameters in acute, subacute, or chronic middle cerebral artery territory ischaemia
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1.2-2.0, $p=0.001$) but only weakly with HTN. Isolated HTN was twice as frequent in patients with FHx_{stroke} vs patients with FHx_{IHD} (2.00, 1.3-3.0, $p=0.002$). Moreover, mean maximum systolic and diastolic blood pressure were significantly higher in TIA-patients with FHx_{stroke} and increased with the number of affected FDR (181/100 if nil, 186/105 if 1, 198/109 if 2+, $p=0.009$). FHx_{IHD} was associated with hypercholesterolaemia. In contrast, there was no association of FHx_{stroke} with glucose or cholesterol levels.

Conclusions: FHx_{stroke} is mainly associated with HTN. In contrast FHx_{IHD} is mainly associated with LVA but less strongly with HTN. It is likely that the apparent heritability of stroke is partly accounted for by heritability of HTN. Analyses of heritability of stroke and candidate gene studies should be adjusted accordingly.

024 CEREBRAL PERFUSION PARAMETERS IN ACUTE, SUBACUTE, OR CHRONIC MIDDLE CEREBRAL ARTERY TERRITORY ISCHAEMIA

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Aims: We sought to measure perfusion parameters in patients with acute or subacute middle cerebral artery (MCA) ischaemic stroke, and in patients with chronic MCA territory ischaemia due to severe stenosis or occlusion of the internal carotid artery (ICA).

Materials and methods: A dynamic CT perfusion method is used to quantitatively measure cerebral blood flow (CBF), cerebral blood volume (CBV), and mean transit time (MTT) from the brain regions supplied by the major cerebral arteries on both sides and from the ischaemic zone in patients with acute or subacute ischaemia.

Results: CT perfusion parameters were obtained from 15 patients with acute MCA ischaemic stroke within 6 h of onset, and 11 patients with subacute stroke between 0.5 and 30 days of onset, 47 patients with unilateral severe ICA stenosis, and 39 patients with unilateral ICA occlusion. In patients with acute ischaemia, the CBF (in mL/100 g/min), CBV (in mL/100 g) and MTT (in s) over the acute ischaemic zone were 13.3 ± 4.7 ($p < 0.0001$), 1.37 ± 0.47 ($p < 0.0005$), and 8.79 ± 3.94 ($p < 0.005$), and those of the mirror sites of the non-ischaemic side were 59.6 ± 12.8 , 2.72 ± 0.75 and 3.99 ± 0.59 . In patients with subacute ischaemia, the perfusion parameters of the infarct gradually "normalised" over time, representing luxury perfusion. Patients with unilateral severe stenosis or occlusion of the ICA had "chronic ischaemia" over the MCA territories with a mild (20%) reduction in CBF, a compensated CBV, and a moderate (60%) prolongation in MTT.

Conclusions: CT perfusion parameters may be useful in acute or chronic cerebral ischaemia. The perfusion abnormalities may guide the acute stroke management of acute ischaemic stroke and influence our decision on revascularisation procedures, especially in asymptomatic patients.

025 QUANTITATIVE ANALYSIS OF ARTERIOLOSCLEROSIS BETWEEN DIFFERENT ARTERIOLES AFTER CEREBRAL INFARCTION

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Purpose: To find out the difference of arteriosclerosis between different arterioles.

Method: Observe the pathological change of the arterioles in cerebral infarct case and contrast case. Analysis of the sclerotic index of the different arterioles quantitatively.

Result: The SI of arterioles whose external diameter (R) is smaller than $50 \mu\text{m}$ is much higher than other groups. The SIs of arterioles (R, $100 \mu\text{m}$ - $300 \mu\text{m}$) has no significant deviation between infarct groups and contrast groups. The SIs of arterioles ($< 50 \mu\text{m}$) in white matter of infarct groups are much higher than grey matter.

Conclusions: The smaller arterioles of cerebral atherosclerotic infarct cases have higher SI, and the arterioles in white matter are easy to be suffered.

026 THE CLINICAL, MRI FEATURES AND PERIPHERAL VASCULAR CHANGES IN CHINESE CADASIL

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Objectives: Cerebral autosomal dominant arteriopathy with subcortical infarcts and leucoencephalopathy (CADASIL) is pathologically characterised by appearance of granular osmiophilic material (GOM) in basal lamina of vascular smooth muscle cells. Although the extracerebral

biopsy is very useful for the pathological diagnosis we are not clear what pathological changes occur in extracerebral arterioles with different calibre. Moreover we need to see if the clinical and MRI features are similar to the report in Caucasian patients.

Material and methods: Among the 83 persons in the four families, 29 cases were classified as clinical suspected patients presenting with one or more of the neurological symptoms. The onset of the disease ranged mainly between the 4th and 5th decades. The main symptoms were recurrent episodic vertigo, with or without hemiplegia, and cognitive impairment. No one in our 29 patients showed migraine. Cranial MRI was performed in six patients and genetic analysis of notch 3 was performed in four probands. Sural nerve biopsies were performed in all probands. The sural biopsy of six non-CADASIL controls were examined under light and electron microscopy.

Results: Genetic analysis revealed notch 3 gene mutations in all probands. Cranial MRI revealed homogeneous and nodular lesions in deep white matter. Three of six patients showed involvement of temporal pole and corpus callosum. The vascular pathological features in sural nerve of four probands were: (1) without marked histological changes in vessel wall; (2) atrophy of medial smooth muscle fibres of arterioles with thickening of arteriole intima, capillary basal lamina, and micro-arteriole adventitia; (3) hypertrophy of medial smooth muscle fibres of arterioles with thickening of large arteriole intima and small arteriole adventitia. In all patients, GOM were noted in the basal lamina of vascular smooth muscle cells, more commonly affecting arterioles, and few affecting the capillaries and veins. Mild thickening of arteriole intima was observed in two of six controls. The media was unremarkable in all control.

Conclusions: Migraine is not frequently seen in our patients. Corpus callosum was also usually involved. The smooth muscle cells in arterioles with large calibre were affected more prominently. Therefore CADASIL should be an angiomyopathy. It should be a goal to observe arterioles in diagnostic examination in the disease. The peripheral vascular changes varied markedly among different patients. The relationship among the extra-cerebral vascular changes and the notch 3 gene mutations needs to be determined in the further.

027 DISTRIBUTION AND OUTCOMES OF ISCHAEMIC STROKE SUBTYPES BY OCSF CLASSIFICATION

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Objectives: To analyse OCSF subtypes and to understand the relationship between OCSF classification and outcomes in a group of Chinese ischaemic stroke patients.

Methods: We registered all the stroke patients consecutively admitted in the wards of Department of Neurology, West China Hospital, Sichuan University, Chengdu from March 2002 to March 2003. We classified 321 patients with ischaemic stroke using OCSF criteria into four subtypes (total anterior circulation infarction TACI, partial anterior circulation infarction PACI, lacunar infarction LACI, and posterior circulation infarction POCI). The patients were followed up at 1, 3, and 6 months after stroke. Outcome measures included death, disability, and recurrence. Interobserver agreement was assessed by Kappa value. The relationship between OCSF subtypes and outcomes were analysed by Logistic regression models.

Results: the interobserver agreement of using OCSF classification was good ($\kappa = 0.679$, 95% CI = 0.561-0.797). Of the 321 included patients, 127(39.6%) were LACI; 121(37.7%) were PACI; 41(12.8%) were POCI; and 32 (10%) were TACI. TACI had the highest case fatality rate. At 6 months the case fatality rate of TACI was 5.4 times higher than that of PACI, and was 7.4 times higher than that of POCI. At 3 and 6 months, LACI had the lowest death or disability rate, and TACI had the highest ones. Total number of recurrence at 6 months was 15 (15/212, 7.1%). Corrected for other prognostic factors, OCSF classification was associated with the outcomes of ischaemic stroke ($p < 0.05$).

Conclusions: The interobserver agreement of OCSF classification was good. In this study LACI was the most common subtype of ischaemic stroke and TACI was the least common. TACI had the worst outcome. OCSF classification can be used to predict outcomes of ischaemic stroke.

028 CLINICAL CHARACTERISTICS OF MOYAMOYA DISEASE SCREENING WITH TRANSCRANIAL DOPPLER

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Objectives: To document the age of onset, the period of diagnosis needed, symptom of onset, symptom on diagnosis, and clinical features of Moyamoya disease screening with transcranial Doppler (TCD).