

## Prognosis and functional outcome after ischaemic stroke in Chinese

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**Introduction:** Ischaemic stroke (ISS) is a significant cause of disability and mortality worldwide. Here, we studied the subtypes and long-term prognosis of ISS in our locality.

**Methods:** A total of 1214 patients with ISS receiving rehabilitation at Tung Wah Hospital during 2004-2008 were prospectively followed-up for a mean of 76±18 months. Presence of recurrent stroke and all-cause mortality during the follow-up period was documented. The modified Rankin Score (mRS) at 1-year follow-up was delineated.

**Results:** It was found that 49% of ISS were due to small artery or penetrating artery atherosclerosis, 19% due to cardio-embolism, 9% due to large artery atherosclerosis, and 22% were of undetermined aetiology. Of the patients, 8.8%, 13.1% and 21.8% had a recurrent stroke and 8.7%, 15.5% and 31.0% passed away at 1-year, 2-year & 5-year follow-up. 45% of patients had mRS >3 at 1 year after stroke. Advanced age was an independent poor predictor for all adverse clinical outcomes ( $P<0.05$ ). Underlying diabetes and stroke of undetermined cause were also independent predictors of recurrent stroke whilst underlying renal disease, stroke due to large artery atherosclerosis, and of undetermined cause were independent predictors of a mRS >3 at 1-year follow-up (all  $P<0.05$ ). Underlying congestive heart failure, carotid atherosclerosis >50% stenosis, stroke due to large artery atherosclerosis or cardio-embolism were independent predictors of mortality at 5 years ( $P<0.05$ ). Statin use was an independent predictor protective against all-cause mortality at 5 years ( $P<0.0001$ ).

**Conclusions:** The prognosis after ISS remains poor in Hong Kong. Statins are protective against all-cause mortality after ISS and should be considered in all patients suffering from ISS.

## Prognostic implications of surrogate markers of atherosclerosis in low-to-intermediate risk patients with type 2 diabetes

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**Introduction:** Type 2 diabetes mellitus (T2DM) patients are at increased risk of developing cardiovascular events. Unfortunately traditional risk assessment scores, including the Framingham Risk Score (FRS), have only modest accuracy in cardiovascular risk prediction in these patients.

**Methods:** We sought to determine the prognostic values of different non-invasive markers of atherosclerosis, including brachial artery endothelial function, carotid artery atheroma burden, ankle-brachial index, arterial stiffness and computed tomography coronary artery calcium score (CACS) in 151 T2DM Chinese patients who were identified low-intermediate risk from the FRS recalibrated for Chinese (<20% risk in 10 years). Patients were prospectively followed up and presence of atherosclerotic events documented for a mean duration of 61±16 months.

**Results:** A total of 17 atherosclerotic events in 16 (11%) patients occurred during the follow-up period. The mean FRS of the study population was 5.0±4.6% and area under curve (AUC) from receiver operating characteristic curve analysis for prediction of atherosclerotic events was 0.59±0.07 ( $P=0.21$ ). Among different vascular assessments, CACS >40 had the best prognostic value (AUC 0.81±0.06,  $P<0.01$ ) and offered significantly better accuracy in prediction compared with FRS ( $P=0.038$  for AUC comparisons). Combination of FRS with CACS or other surrogate vascular markers did not further improve the prognostic values over CACS alone. Multivariate Cox regression analysis identified CACS >40 as an independent predictor of atherosclerotic events in T2DM patients (hazard ratio=27.11; 95% confidence interval, 3.36-218.81;  $P=0.002$ ).

**Conclusions:** In T2DM patients identified as low-intermediate risk by the FRS, a raised CACS >40 was an independent predictor for atherosclerotic events.