



Title	Predictive factors for ischemic strokes complicating tuberculous meningitis
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Stroke is the third leading cause of death and the major cause of disability in Hong Kong. Based on information from death certificates, the annual stroke mortality is 3,000–3,500 of rate 45–52 per 100,000 in recent few years.

In Hong Kong, more than 90% of hospital services are provided by the Hospital Authority (HA) which is wholly funded by the Government. All Hong Kong residents are entitled to enjoy comprehensive medical services heavily subsidized by the Government. Under HA, there are 14 acute general hospitals distributed in 7 clusters providing acute stroke care. It is the policy to admit all acute stroke patients for hospital treatment. There are about 25,000 hospitalizations for acute stroke each year. All acute stroke patients are admitted to the Medical Department. They would be transferred to Neurosurgery Department only if neurosurgical intervention is contemplated. The usual management of acute stroke patients in major regional hospitals are: acute stroke unit care with multidisciplinary approach and general medical care; non-contrast CT scan of the brain within 24 hours; early initiation of appropriate anti-thrombotic therapy; identification and treatment of risk factors; and early initiation of rehabilitation.

After stabilization, if further rehabilitation is required, stroke patients will be transferred to rehabilitation hospital in the same cluster for inpatient rehabilitation or discharged home with outpatient rehabilitation at day hospital according to the neurological impairment and social support.

Predictive Factors for Ischemic Strokes Complicating Tuberculous Meningitis

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Background

Tuberculous meningitis (TBM) is a serious neurological disorder which is not uncommon locally. Ischemic strokes complicating TBM cause severe morbidity and even mortality. Predictive factors for symptomatic cerebral infarcts complicating TBM are uncertain.

Methods

Patients with TBM managed in our hospital from 1997 to 2001 were studied. All had initial CT brain before lumbar puncture and repeated CT/MRI brain scan at 3 months of treatments. An eight-week course of systemic corticosteroids were given for patients with stages 2 and 3 disease plus anti-TB medications for 12-18 months, with clinical assessments at 1 month, 3 month and then every 4 months by neurologists. Death and a modified Barthel index <12 at 1 year of therapy were criteria for poor prognosis. Patients with and without complicated ischemic strokes were compared.

Results

A total 31 patients were studied, 7 developed ischemic stroke early or late in the course of disease. The mean age of onset for patients with and without ischemic strokes were 45.3 and 43.1 years ($p=0.432$). Two patients developed asymptomatic cerebral infarcts on MRI scan at 3 months. TBM complicated by ischemic strokes were characterized by a longer duration of presenting symptoms, mean 22.9 days versus 6.5 days for those without ischemic strokes ($p=0.015$), higher frequency of stage 2 or 3 disease on presentation ($p=0.043$), history of incoordination ($p=0.02$), cerebellar ataxia on examination ($p=0.001$), hydrocephalus on initial CT scan ($p=0.018$), residual hemiparesis ($p<0.001$) and poor prognosis at 1 year ($p=0.001$).

Conclusion

Ischemic stroke complicating TBM is not uncommon (23%). Ataxia on presentation and hydrocephalus on initial CT brain may predict.