



<b>Title</b>	<b>Haemorrhagic stroke vs ischaemic stroke: length of stay and functional outcome measures in stroke survivors</b>
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**HAEMORRHAGIC STROKE VS ISCHAEMIC STROKE : LENGTH OF STAY AND FUNCTIONAL OUTCOME MEASURES IN STROKE SURVIVORS.** Leonard SW LI, YM FONG, KP LEUNG, TF CHEUNG, SL HO. Department of Medicine, Neurology and Rehabilitation Medicine, The University of Hong Kong, Queen Mary Hospital and Tung Wah Hospital, Hong Kong.

A prospective study of the difference in functional outcome and duration of rehabilitation between the haemorrhagic and ischaemic stroke was performed from the Tung Wah Stroke Rehabilitation Databank. 239 stroke survivors transferred to Tung Wah Hospital for intensive rehabilitation between October 95 and September 96 were evaluated. Stroke type was defined by clinical assessment and CT scan. Functional outcome was measured by Barthel (BI) and Functional Independent Measurement (FIM) scoring. Length of stay was defined by hospitalisation days in the stroke rehabilitation unit. Among the 239 patients, 45 (21.8%) were haemorrhagic and 172 (78.2%) were ischaemic stroke. There were no statistically significant difference in sex and age between 2 groups. In the ischaemic group, there were 98 male and 89 female, with a mean age of  $66.1 \pm 9.8$ . In the haemorrhagic group, there were 25 male and 27 female with a mean age of  $66.4 \pm 11.5$ . The comorbidities including hypertension, diabetes mellitus, ischaemic heart disease and previous stroke also had no significance between 2 groups. The incidence of complications including fall, pressure sore, aspiration pneumonia, urinary tract infection and acute gastrointestinal bleeding during the period of rehabilitation were also similar in 2 groups. An average length of stay in rehabilitation unit was  $40.9 \pm 23.4$  days for the haemorrhagic group and  $38.1 \pm 22.9$  days for the ischaemic group ( $p=0.47$ ). The mean functional score in the haemorrhagic group was  $41.1 \pm 15.7$  (BI) and  $70.3 \pm 9.4$  (FIM) on admission, and was  $81.5 \pm 9.4$  (BI) and  $103.8 \pm 16.5$  (FIM) on discharge. The mean functional score in the infarct group was  $55.0 \pm 19.9$  (BI) and  $80.1 \pm 21.5$  (FIM) on admission, and was  $87.7 \pm 11.6$  (BI) and  $103.2 \pm 20.4$  (FIM) on discharge. The results showed slightly longer stay of haemorrhagic patients but was not statistically significant. The functional status of haemorrhagic patients were lower than that of infarct patients on admission but the functional outcome had no difference between the 2 groups. It was concluded that the stroke type would not affect the functional outcome of stroke rehabilitation.

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**DELAY IN PRESENTATION, ADMISSION, AND DIAGNOSTIC IMAGING AMONG STROKE PATIENTS.** Windsor MAK, Raymond TF CHEUNG, SL HO. Division of Neurology, Department of Medicine, Queen Mary Hospital, Hong Kong.

**Background** Clinical trials have demonstrated the efficacy of intravenous tissue plasminogen activator (tPA) and subcutaneous low-molecular-weight-heparin (LMWH) in improving the outcome in ischaemic stroke. The therapeutic windows of both treatment are narrow: 3 hours for tPA and 48 hours for LMWH. Ideally, these therapies should be given and monitored in the Acute Stroke Unit (ASU).

**Objective** To identify factors delaying admission to the ASU and strategies to shorten the delay.

**Method** Stroke patients who presented to the Accident and Emergency Department (AED) and were admitted to the ASU over a 6-week period were studied. The time of onset of symptoms, arrival at the AED, admission to general medical wards, computed tomography (CT) of the head, and admission to the ASU was recorded. The association between the delay in presentation to the AED and severity of stroke ( $\geq 15$  or  $<15$  in the National Institute of Health Stroke Scale score on admission), history of cerebrovascular events, or history of vascular risk factors, was tested using unpaired t-test.

**Results** Thirty-seven patients were available for the analyses. The delay from onset of symptoms to arrival at the AED, from the AED to ward admission, from the ward to urgent CT, and from CT to ASU admission was 16 hours (range: 30 minutes to 4 days), 39 minutes (range: 9 to 39 minutes), 5.5 hours (range: 45 minutes to 14 hours), and 28 hours (range: -5 to 92 hours), respectively. Only fifteen patients presented within 3 hours of onset of symptoms, and 14 of those were admitted before the end of 3 hours. Nevertheless, CT of the head caused a further delay of 6.5 hours (range: 95 to 853 minutes) in these 14 patients, and so only 1 patient had CT done within 3 hours. Thirty-three patients presented within 48 hours, and 32 of those had CT done within 48 hours. There was significant association between the delay in presentation and severity of stroke on admission with a 2-tailed p value of 0.0006.

**Conclusion** Our results suggest that many more patients are potentially eligible for LMWH than tPA, that patients with mild stroke tend to overlook their symptoms, and that therapy has to be initiated in general wards unless the delay in ASU admission can be shortened. In future, efforts should be given to educate the public and to achieve urgent CT studies to shorten the delay so that more stroke patients may benefit from specific acute stroke therapies.