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New Concept in Stroke Therapy -
Enhancing Brain Blood Flow through External Counterpulsation

Stroke is a major cause of death and disability in Hong Kong. Every year, more than 20,000 patients were admitted to hospital for stroke treatment. Ischemic stroke is caused by a blockage of blood flow to the brain. Apart from physiotherapy and occupational therapy, there is no other therapy that can enhance neurological recovery. Currently there is very little active treatment to improve blood flow to the brain.

External counterpulsation (ECP) is able to improve endothelial function and enhance blood flow to the heart, brain and kidney but there have been very few good clinical studies in this field. The Department of Medicine and Therapeutics and the S.H. Ho Cardiovascular Disease and Stroke Centre at The Chinese University of Hong Kong has recently completed a pilot study on the use of ECP to access the effect of ECP on brain blood flow in stroke patients with relevant large artery occlusive disease.

50 stroke patients (32 men 18 women) in the Prince of Wales Hospital had studied since 2004. The mean age was 67 with 80% were hypertensive and 50% were diabetics. The median time after stroke was 14 days. 25 received immediate ECP therapy from week 1-7 (early group) and the other 25 received ECP from week 8-14 (late group).

After 7 weeks of ECP, patients in the early group had an increase of 47 ml/min blood flow when compared to 28 ml/min in the late group. The stroke deficit improved faster in the early group than the late group. By 14 weeks, none of the patients in early group had severe disability versus 24% of those in the late group. Besides, repeated strokes occurred in 1 patient in the early group and 4 patients in the late group.

ECP appears to be safe and effective in increasing brain blood flow and enhancing neurological recovery after stroke. An international clinical trial is being planned in many countries in Asia to confirm this encouraging result.