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Stroke care development in Sri Lanka: The urgent need for Neurorehabilitation services

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Abstract

Stroke is the leading cause of adult disability in Sri Lanka. Each year one in 110 people in Sri Lanka suffer from a stroke. Population of Sri Lanka is approximately 20 million. It is predicted that, by 2020, 20% of the population in Sri Lanka will be older than 65 years of age. As stroke commonly occurs in the elderly, there is thus an impending epidemic of stroke in Sri Lanka. Sri Lanka is served by about 30 neurologists (one neurologist per 600,000 people). There are six stroke units in Sri Lanka currently. The lack of stroke units and limited opportunities for neurorehabilitation are major limitations for stroke care in Sri Lanka presently. Thus, training of more neurologists and establishment of stroke units in all major hospitals in Sri Lanka are of high priority. Neurologists' interest and knowledge in neuroanatomy, neuropathology and neurophysiology make them ideal profession to specialize in Neurorehabilitation. There is thus an urgent need to establish Neurorehabilitation as a subspecialty for Neurology trainees; and to establish postgraduate program in Rehabilitation Medicine to improve stroke care in Sri Lanka.

DEVELOPMENT OF STROKE CARE SERVICES IN SRI LANKA

Sri Lanka is a small island in the Indian Ocean with a land area of 62,705 square kilometres. The island stretches to a maximum length of 435 kilometres and a width of 225 kilometres. The population is approximately 20 million, with gross national income per population of about USD 820, close to the level in Philippine and China. Sri Lanka is served by about 30 Neurologists.

In Sri Lanka stroke is a leading cause of adult disability and is the fifth leading cause of hospital deaths.[1] Each year one in 110 people in Sri Lanka will suffer a stroke.[2] Sri Lanka has an ageing population. It is predicted that, by 2020, 20% of the population will be older than 65 years of age. Stroke more commonly occurs in these older age groups and so this will greatly impact on the number of strokes occurring. Sri Lanka must be prepared for this impending epidemic. The establishment of the National stroke Association in 2001 laid a solid foundation to improve stroke services in Sri Lanka. The National Stroke Association which is a member of the Asia Pacific Stroke Association and the World Stroke Organization has been actively involved in carrying out varying programs to improve the stroke care of the country. The birth of the Association of Sri Lankan Neurologists (ASN) in 2007 was another landmark event.

As a result of the enthusiasm of the National Stroke Association and the passionate stroke specialists, Sri Lanka declared the National Stroke day in 2002, commenced its second stroke unit in 2007, held first international stroke conference in 2008, won the gold award from World Stroke Organization for activities organized for world stroke day in 2009. Sri Lanka will be the host for the Asia Pacific Stroke Conference in 2011. When compared with neighbouring countries, the commitment of the Sri Lankan government for control and care of the non communicable diseases is well demonstrated by the allocation of nine hundred million Sri Lankan rupees (1USD

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= 110 Sri Lankan rupees) for the management of non communicable diseases (NCDs) for the next three years (2011 onwards).

There is irrefutable evidence that stroke units save lives.[3] In year 2000, the first stroke unit in Sri Lanka was established in National Hospital of Sri Lanka, Colombo. There are six stroke units in Sri Lanka at present. Establishment of stroke units throughout Sri Lanka is an urgent need at present. We are happy to report that in 2011, the Ministry of Health has decided on the policy to establish Stroke Units in all teaching and provincial hospitals.

The most recent stroke unit in Sri Lanka was established in 2011 in Uva province. Uva is the largest but second most populated province in Sri Lanka, located at its south east. It is estimated that there are about 1.3 million people living in the region. Stroke in this region is the leading cause of adult disability. The only tertiary care facility in the region is Badulla hospital (1,300 beds). The only Neurologist who serving the nearly two million population in Uva province and its surrounding area is based at Badulla hospital. The Neurologist is also required to travel to regional hospitals on a regular basis. This includes two base hospitals (Diyathalawa, 292 beds and Mahiyangana 256 beds) and three District hospitals (Welimada 101 beds, Bandarawela 104 beds, Passara 109 beds).[4]

There was no dedicated stroke unit in the whole of Uva province. The enthusiasm of local specialists, administrators and an expatriate neurologist out of whom the majority are also authors of this paper led the recent birth of the Stroke Unit of Diyatalawa. While administrators facilitated the establishment of the Unit, specialists were involved in conducting symposia/ workshops/meetings with of the aim of introducing coordinated stroke services in the region. Nurses and allied health staff from the region underwent an in service training programme for 2 weeks for stroke unit care at the Stroke Unit, the National Hospital of Sri Lanka in Colombo. At present work is in progress to establish a dedicated stroke rehabilitation centre at Diyathalawa hospital.

When compared with the other countries in the South East Asian region, while Sri Lanka has shown a marked progress in stroke services over the last one and half decades, there is a vast room for improvement of its services for needy stroke patients. The lack of organised stroke care facilities (i.e. stroke units) in majority of hospitals is a major problem for the country at present. Shortage of stroke beds leads majority of the stroke patients to be admitted to General Medical wards even in hospitals where there are stroke units. Many of these patients are subject to a premature discharge to their home environment and to seek the help of varying forms of alternative medicine. As a result, patients are not receiving the care they need to maximise their outcomes.

URGENT NEED TO ESTABLISH NEUROREHABILITATION SUBSPECIALTY IN SRI LANKA

Training health care professionals is the key to improve the Health care delivery services of any speciality. The Post Graduate Institute of Medicine (PGIM) is responsible for recognizing specialities and training specialists in Sri Lanka. PGIM conducts more than 80 post graduate programs at present. However, there is no separate postgraduate rehabilitation medicine curriculum in Sri Lanka. The limited rehabilitation medicine centres in Sri Lanka are currently led by Rheumatologists. The Rheumatologists work hard to provide the rehabilitation input to needy patients as much as the available limited rehabilitation facilities allow them to do so. Insufficient allied health workforce (speech pathologists, occupational therapists, social workers and physiotherapists) add further to this grim situation. Initiating training programs for Neurorehabilitation specialists and allied health workforce is another key requirement to improve stroke services in Sri Lanka.

Neurorehabilitation is the process of restoration of function among patients with neurological disorders. This process involves multidisciplinary teams of medical, nursing and allied health staff who use multiple strategies to reduce disabilities and impairments. The overall aim of the approach is to achieve better quality of life for patients with neurological disorders.[5]

Sri Lanka currently has 30 neurologists. With a population of approximately 20 million people this equates to only one neurologist for every six hundred thousand people. This poor doctor patient ratio highlights the imperative to train more neurologists in Sri Lanka.

Neurologists have become increasingly involved in the practice of rehabilitation as rehabilitation medicine has developed as a medical subspecialty and treatment options for neurological disorders have expanded. Unfortunately Neurologists and Neurology trainees may not be aware of the rewarding opportunities in neurorehabilitation. We believe that there is an urgent need to establish Neurorehabilitation as a subspecialty for

neurology trainees, and to establish a postgraduate program in Rehabilitation in Sri Lanka.

The late Professor Heinrich Sebastian Frenkel is said to be the founder of rehabilitation. He was born in a small village (Heiden) in Switzerland on 5 June 1860.[6] He studied medicine in Germany. He learnt neurology from famous neurologists such as Erb and Kreplin and developed a keen interest to be specialize in neurology.[7] In 1887, Frenkel was examining a patient with tabes dorsalis and noted that the finger nose test was abnormal. Frenkle told the patient about the meaning of this abnormality. When reviewing the patient at a later date Frenkle noticed that the patient had significantly improved. This was a completely new experience to Frenkle. On questioning the patient, he learnt that the patient had been practising the test on a regular basis so that he could "pass the test ".[6] Frenkle was inspired by this and decided to study the issue of exercise and neurological disorders in a systematic manner. It was said that Frenkel himself was disabled with a hip problem as a child and suffered a limp as a result of this. The results of personal attention of Frenkle was so popular that both patients as well as and physicians from all over the world travelled to the small village Heiden to gain benefit from this new form of intervention and to learn the art of undertaking this form of treatment. In 1897, an American physician, B. Bettman published the methods used by Frenkle in the Journal of the American Medical Association.[6]

Neurorehabilitation is the restoration of function among patients with neurological disorders. This needs a multidisciplinary approach requiring strategies to reduce impairments, handicaps, and disabilities with the aim of improving quality of life among patients with neurological disorders.[8] Sri Lanka is in unique position to introduce this as a new subspecialty for their trainees in neurology. Neurologists' interest and detailed knowledge in neuroanatomy, and neurophysiology make them ideal partners in neurorehabilitation.[5] We believe the strong interaction between understanding of the aetiology, pathology and treatment modalities in neurological disorders and the process of rehabilitation can bring an efficient leader to the rehabilitation team. Given the multitude of rehabilitation practices among indigenous medical community (Ayurveda in particular) in Sri Lanka and other Asian countries may provide exciting research opportunities in the field of Neurorehabilitation.

American Academy of Neurology (AAN) leaders have been active in the development, training, certification and continuing education in the field of Neurorehabilitation.[8] Indeed, the establishment of the American Society of Neurorehabiliation (ASNR) in 1991 led to the development of guidelines for neurorehabilitation, fellowship training, recertification and continuous medical education in the field of Neurorehabilitation. Trainees in Neurorehabilitation need to learn the rehabilitation principles and management of rehabilitation issues among patients with neurological disorders such as congenital, vascular, inflammatory, demyelinating and traumatic neurological illnesses. Trainees in Neurorehabilitation should learn a new set of skills such as basic mechanisms of recovery of neurological injury (regeneration, plasticity, exercise induced muscular and systemic changes , behavioural adaptation), symptom specific rehabilitation techniques (management of spasticity, dysphagia, cognitive impairment, central and peripheral neuropathic pain, neurogenic bladder), rehabilitation methods (outcome measurement and assessment scales, orthotics and emerging technologies such as stem cell therapy etc), and also the specific disease targeted Neurorehabilitation skills.[8]

It is time for us to learn and inspired by the Neurologist who was responsible for the introduction of Rehabilitation to the modern Medicine. We sincerely hope that the specialists and other authorities responsible for improvement of services will recognize the need to establish stroke units and to initiate training in Rehabilitation for the benefits for the stroke and other neurological patients.

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