



NEWSLETTER

GALLE MEDICAL ASSOCIATION

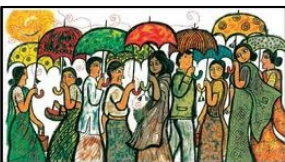
GMA – NEWS

September 2014

Sybil Nānde Apitath Kiyanna

GMA organized a half day activity with Sybil Wettasinghe, veteran children's book writer and an illustrator in Sri Lanka on 23rd of August 2014. The programme was mainly focused on children where they had an exciting time of drawing and listening to stories. Sybil nanda narrated her favorite past time stories to the children as well as to their parents who happened to belong to her vast generation of fans.

We are indeed proud to have a person of her caliber back in Galle, and also for being able to organize a day full of activity exciting and memorable.



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“The artificial heart and lung for the critically ill –Introducing ECMO Life Support”

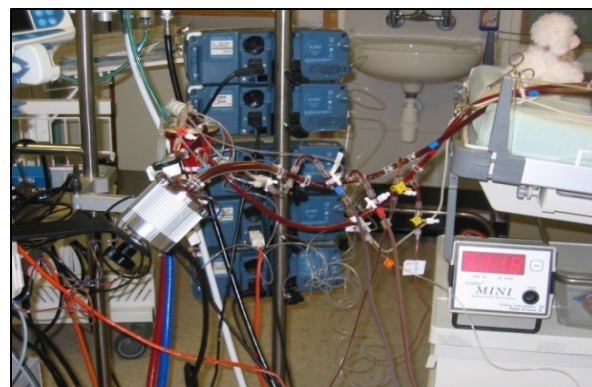
We had Dr. Richard irmin, Emeritus Cardiothoracic Surgeon from Leicester, UK on the 22nd of July 2014 for a lecture/demonstration on Introducing **Extra-Corporeal Membrane Oxygenation (ECMO)** Life Support to Galle.

Dr. Firmin highlighted of the history and development of the cardiopulmonary bypass technology, known as ECMO, in the Intensive Care setting. He showed how this only became possible with the development of the membrane oxygenator that limited the blood cell injury caused by physical oxygenation of blood. He showed how the technique was useful in the severest cases of cardio-respiratory failure from neonatal birth asphyxia up to severe pneumonia and cardiac failure in adults.

The year 2009 was an important landmark in the development of ECMO as the development of new centrifugal blood pumping systems and new low resistance membrane oxygenators coincided with the H1N1 Infuenza A pandemic and the publication of a randomised trial of ECMO for ARDS in adult patients. Hundreds of young adult patients were treated with ECMO support worldwide in the winters of 2009/2010 with excellent survival rates (70-80%).



CMO demonstration in Galle



The ECMO System

A range of applications for ECMO support were discussed with the best results being for Meconium Aspiration Syndrome in neonates, (thus preventing the devastating effects of neonatal brain damage and cerebral palsy), and the largest growth area being for cardiac support post cardiac surgery for congenital heart disease. The potential uses for resuscitation, organ donation and its use instead of intubation for severe asthma were also mentioned.

The possibilities for the technology being used in selected patients in Galle were discussed and the feeling was that there were enough patients who would potentially benefit from the technique between the NICU, the PICU, the Adult ICU and the Cardiac ICU to develop an effective service. Funding for the equipment had been applied for by Dr.Tolusha Harischandra of the Cardiothoracic unit in Galle and the equipment was already in Galle on a loan basis on compassionate grounds as a post-operative support.

Deep-Brain Stimulation — Entering the Era of Human Neural-Network Modulation

The earliest records of therapeutic brain stimulation dates back to 50 A.D where the court physician for the Roman emperor Claudius, used an electrical torpedo fish to treat headaches. Many years elapsed before we understand treating human disease by applying an electrical current within the human brain. This year's Lasker–Debakey Clinical Medical Research Award, recognizes the contributions of two pioneers in deep-brain stimulation (DBS): Alim-Louis Benabid, a neurosurgeon, and Mahlon DeLong, a neurologist. Their research and its translation into clinical practice have improved the lives of more than 100,000 people with Parkinson's disease or other neurologic or neuropsychiatric disorders.

After the introduction of levodopa, it became routine for patients with Parkinson's disease to “awaken” from frozen states, and nearly all were able to live at home. Yet important and unexpected challenges emerged. The most troublesome were dopamine-related, medication-induced complications and there was a growing realization that levodopa was not a cure and that the disease progressed despite miraculous “awakenings.”

In the early 1970s, shortly after levodopa's introduction, Mahlon DeLong began studying on basal ganglia. He described the electrical activity patterns in primate basal ganglia neurons and their responses to movement. He and his colleagues began research on basal ganglia and Parkinson's disease in 1986 when they introduced the segregated circuit hypothesis. They tested this hypothesis by destroying the subthalamic nucleus in a primate model of Parkinson's disease, and demonstrated improvement in disease symptoms. Soon thereafter, electricity was introduced as a modulation-based approach to the brain circuits in Parkinson's disease.

A French neurosurgeon, Alim-Louis Benabid, took the courageous step of leaving a wire that could provide continuous electrical current inside a human brain. In 1987, Benabid operated on an elderly man who had tremor and left a neurostimulator in the man's brain. He implanted a wire with four metal contacts at its tip. This wire, the DBS lead, was then connected to an external battery source. Benabid and colleagues programmed the device using a small box with buttons and switches. As simple as the system was, it turned out to be very powerful, allowing them to individualize the settings and they came out with promising results.

DBS therapy is usually considered only after all other treatments have been exhausted, but it has provided many patients with a new lease on life. Yet, the biology and mechanisms underpinning DBS therapy still remain unclear. Thanks in large part to the contributions of two extraordinary scientists; we have entered the era of human neural-network modulation.

Okun MS. Deep-Brain Stimulation - Entering the Era of Human Neural-Network Modulation. *N Engl J Med.* 2014 Sep 8.

DeLong MR, Benabid AL. Discovery of High-Frequency Deep Brain Stimulation for Treatment of Parkinson Disease: 2014 Lasker Award. *JAMA.* 2014 Sep 8. doi: 10.1001/jama.2014.11132.

GMA News

The **Newsletter** will be published quarterly. We welcome topical letters, short book reviews and brief subject updates, letters focusing on current academic and professional issues of relevance, medical cartoons *etc* from the membership to be published in the newsletter.

CALENDAR OF EVENTS 2014

- *Annual Academic Sessions 24th - 26th September 2014*
- *GMA short trip to Wijaya Holiday Resort, Ingiriya, 12th October 2014*

