

## **Interventional Neurology in Bangladesh: Dream to Reality**

Sharif Uddin Khan<sup>1</sup>, Kazi Mohibur Rahman<sup>2</sup>, Sirajee Shafiqul Islam<sup>3</sup>

<sup>1</sup>Associate Professor, Department of Neurology, National Institute of Neurosciences & Hospital, Dhaka, Bangladesh;

<sup>2</sup>Associate Professor, Department of Neurointervention, National Institute of Neurosciences & Hospital, Dhaka,

Bangladesh; <sup>3</sup>Associate Professor, Department of Neurointervention, National Institute of Neurosciences & Hospital, Dhaka, Bangladesh

In last two to three decades neurosciences has seen major advancement in understanding neurological diseases and in creating an effective therapeutic options. One of these is the area of stroke and cerebrovascular diseases; one of the major diseases burden of brain.

Interventional neurology is a sub-specialty of neurology that uses catheter technology, radiological imaging and clinical expertise to diagnose and treat disease of blood vessels of brain and spinal cord. In 1928, Egas Moniz who was a professor of medicine and chair of neurology at University of Lisbon in Portugal, had started first time this discipline by puncturing carotid vessels and injecting dyes and visualizing blood vessels on x-rays, commonly called cerebral angiography. Major advancement was in the year 1991, when Guido Guglielmi first developed detachable platinum coils which can be placed into the aneurysm to prevent it from rupture and subsequent subarachnoid hemorrhage and fatality. By this technique a microcatheter is placed in cerebral arteries through a small puncture of about 1mm in the femoral artery (an artery in groin). Since then technological development has been leap and bound to reach present status where endovascular approach is the preferred and first line of management of all neurovascular disorders. Throughout the past decade, interventional neurological techniques have revolutionized the therapy for vascular disorders of head, neck and central nervous system. The commonly performed procedures today in neurointervention are endovascular treatment of brain aneurysm by coiling, and by flow diversion and flow reversal, embolization of brain and spinal arteriovenous malformations (AVM), carotid angioplasty and stenting, intracranial Stenting, mechanical thrombectomy in acute stroke, pre-operative tumor embolization of skull base vascular tumors, embolization of life threatening epistaxis and other bleedings, endovascular repair of vascular trauma of head and neck etc.

Worldwide this discipline has been exercised by neurologists, neurosurgeons and neuroradiologists. In Bangladesh the journey of Interventional Neurology dates back to 17th December 2002 when Dr. Shakir Husain was invited as one of the guest speakers in the International Neurology Seminar held in Dhaka. He

introduced this exciting field of Interventional Neurology and neuro-intervention to the members of Society of Neurologist of Bangladesh (SNB) through his lecture "Newer perspective in Neurosciences: Interventional Neurology". The SNB signed a non-formal agreement for fellowship training of its members with Dr. Shakir Husain, who then was working in Sir Ganga Ram hospital, New Delhi. Prof Dr Hayee was the first person in Bangladesh who joined this fellowship program and eventually on return to Bangladesh started laying down for the development of this specialty. Society of Neurologists of Bangladesh organized several workshops in BSMMU and DMCH. As the dedicated Neurointerventional Suits were not available, initially couple of workshops on neurointervention was conducted in BSMMU cardiac Cath lab with the strong support and patronization of Prof Anisul Haque and Prof. Dr. AKM Anwar Ullah; the President and the Secretary General of SNB at that time.

Subsequently, Prof. Dr. Quazi Deen Mohammad as a principal of Dhaka Medical College felt the necessity to start this new subspecialty for the first time in Government set up in Dhaka medical college in 2006-2007 sharing with cordial and enthusiastic cooperation and support of department of Anaesthesia and department of Cardiology to provide cardiac Cath lab for the workshops. Having been trained for one year (Egas Moniz fellowship training) in neurointervention from Sir Gangaram Hospital New Delhi, India; Dr. Sharif Uddin Khan and Dr. Kazi Mohibur Rahman, started for the first time in a government set up in DMCH. More than one thousand diagnostic DSA were done in Cath lab of DMCH. Moreover, multiple workshops on neurointervention were organized on regular basis (thrice a year) with active participation and guidance of Dr. Shakir Husain. This approach not only helped in training and developing the set up for the neurointervention but also helped poor patients to get this world class treatment, a rather expensive treatment abroad, done in Bangladesh at much low cost and help stop referrals to other countries. This was the beginning of the establishment of new era in Neurointervention. Several members of neurology and neurosurgery

fraternity contributed to this through their dedication and untiring effort to support this development.

The next step was the incorporation of this concept in the planning of upcoming National institute of neurosciences & Hospital NINS under able leadership of Dr. Quazi Deen Mohammed and Dr. Md. Badrul Alam. For the creation of a dedicated neurointervention setup, they included all the recommendations and advice put forwarded by Dr. Shakir Husain who had by now become an inseparable part of this mission.

The day (date of inauguration of NINS) was a great moment in the history of Neurosciences and especially for Neurointervention in Bangladesh when NINS was inaugurated with a state of art Neurointervention set up with a dedicated state of art biplane neurointervention cath lab and a single plane neuro cathlab, a first of its kind in south east Asia at that moment. The vision of SNB under leadership of Prof. Dr. Quazi Deen Mohammad came to the reality. The National institute of neurosciences & Hospital (NINS) also became the first and only teaching institute in Asia with an independent Interventional Neurology Program with well-trained Interventional Neurologist. It was a great moment and a moment of pride for the members of neurosciences and Society of Neurologist of Bangladesh and people of Bangladesh in particular. To reach this stage there were several hardships and obstacles were dealt with as always one faces when you want to change the paradigm. One of the major challenges was to have trained manpower in this field to run the program of neurointervention for the full time 24x7. However, by now a strong bond was created between the society of neurologist of Bangladesh and Dr. Shakir Husain who continued to accept neurologist for a "one year fellowship training in Interventional Neurology and Stroke" even when he changed his place of work from Sir Ganga Ram Hospital, New Delhi to Max Super-specialty Hospital and subsequently Saket City Hospital, New Delhi. In this journey more and more young neurologists came forward to have training in this new discipline. Dr. Radhesham Shaha, Dr. Bahadur Ali Miah (2007-08), Dr. Suvash Kanti Dey, Dr. Shahidullah Sabuj (2010-11) also finished their one year fellowship training and started developing neurointervention program at BSMMU with a passionate support of Dr. Shakir Husain who continued to conduct regular workshops at DMCH, NINS and BSMMU. In this journey Dr. Shirajee Shafiqul Islam also took his fellowship training from Medanta medicity India in 2015 and now working in NINS. In 2015 Dr. Aminur Rahman and Dr. Anis Ahmed also

obtained their fellowship training in neurointervention from University hospital of Zurich, Switzerland and Ramathibodi Hospital, Mahidol University, Bangkok, Thailand. Dr. Dewan Md. Elyas, Dr. Khairul Kabir Patwary also spent short term basic training from India in 2015 and now working with good reputation. The journey didn't stop here. Very recent time Dr. Shahidul Dr. Md. Amir Hossain and Dr. Abul Momen finished their fellowship training under Dr. Shakir Husain in neurointervention and they are working in NINS.

The society of Neurologist of Bangladesh so far has sponsored nine members of SNB to obtain fellowship and training under Dr. Shakir Husain, and have now been working as a faculty in major institutions of the country including BSMMU, Dhaka Medical College, and NINS. This collaboration has not only benefited the young faculty, fellows and residents to learn the neurointervention but has also helped hundreds of patient to obtain this minimally invasive treatment, which is otherwise so expensive that it is beyond the reach of a common man who had to travel abroad for treatment and thus saving foreign currency for the nation.

After achieving initial development of Neurointervention, a milestone in Neurology, NINS signed an MOU with Dr. Shakir Husain and appointed him as an Honorary Professor of Neurointervention at NINS by the Govt. of Republic of Bangladesh in year 2016. The vision of Prof. Dr. Quazi Deen Mohammed, Dr. Badrul Alam, Dr. Shakir Husain and eminent members of neurology & neurosurgery fraternity is to create NINS as a center of excellence for stroke and Neurointervention on a continuum basis. The Cath lab in NINS was inaugurated on 24.04.2013. Very recently the first independent Department of Interventional Neurology with two units and 11 beds were established in November 2017 in NINS. Since the inauguration more than two thousand diagnostic and around two fifty therapeutic procedures were done NINS. We are sure with such a dedication and persistence of founders of this concept, NINS and Bangladesh will become a center of great repute in Asia not only for the delivery of healthcare but for training, education and research in this field which is now the focus point of development.

**Correspondence:** Dr. Sharif Uddin Khan, Associate Professor, Department of Neurointervention, National Institute of Neurosciences & Hospital, Dhaka, Bangladesh; Email: sharif.911@gmail.com; Cell no.: +880 1711-130273

[Journal of National Institute of Neurosciences Bangladesh, 2017;3(2): 67-68]