

DIGITAL SUBTRACTION ANGIOGRAM

New horizon in the treatment of stroke

DR TAREQ SALAHUDDIN

Brain controls all activities of our body. Like other parts of the body, brain also gets nutrition from blood. There are many diseases of brain like stroke, tumour, different kinds of infections, trauma, degenerative diseases and so on. Among them stroke is known almost to everybody. Some of us has misconception that stroke is the disease of heart, which is not correct. Stroke is completely a disease of the brain.

In a neurology unit of a hospital, more than 50 per cent are stroke patients. "About 5 lakh people get stroke every year in our country", informed Dr M A Hayee, Head of the Department of Neurology of Sir Salimullah Medical College and Mitford Hosital, Dhaka. "Many patients die of stroke. The patients who survive, usually develop various complications and become disable shortly", he added.

What is a stroke?

A stroke, also called brain attack is a medical emergency. Strokes happen when blood flow to the brain stops. Within minutes, brain cells begin to die.

There are two kinds of stroke. The more common kind, called ischemic stroke, is caused by a blood clot that blocks or plugs a blood vessel in the brain. The other kind, called hemorrhagic stroke, is caused by a blood vessel that breaks and bleeds into the brain.

"Mini-strokes" or transient ischemic attacks (TIAs), occur when the blood supply to the brain is briefly interrupted.

When an area of brain gets less than 50 percent of normal blood flow due to rupture of vessels or deposition of plaque or



Dr M A Hayee is performing DSA with his team

DR TAREQ SALAHUDDIN

atheroma (thickening of the walls of an artery by deposits of a fatty substance such as cholesterol) inside the vessel, the neuron (the structural and functional unit of brain) of the area die. A stroke patient's presentation of symptoms depend on which area of brain dies.

Angiogram in the diagnosis of stroke

Some of you may hear about angiogram of heart i.e. of coronary vessels; some of you may have seen it; or some of you may have gone through the procedure.

Now-a-days, a special type of angiogram is being used in the diagnosis of stroke and some

other neurologic problems. This is called Digital Subtraction Angiogram (DSA) or cerebral DSA. The procedure is similar to a coronary angiogram. In fact, this is the study of the vessels that supply our brain (carotid and vertebral system).

In our country, Dr M A Hayee is the pioneer to introduce cerebral DSA. He has done about 500 DSA of different cases. He told Star Health about different aspects of cerebral DSA.

Procedure of DSA and its benefit

Cerebral angiogram or DSA is an invasive procedure. But the patients do not feel any pain during DSA. They remain alert

even when the procedure is being done.

Like coronary angiogram, the entry point is femoral artery (the artery which runs down the front of the thigh and then crosses to the back). Local anaesthetic drug is applied over the area so that the patient does not get any pain.

A head hunter catheter is introduced which ultimately reaches the carotid and vertebral artery system crossing the great vessels of the heart.

Photograph is taken inside the vascular system of the brain and a special radio-opaque dye is used before taking the photographs. Then it can reveal the stenosis or blockage of the vas-

cular system as well as the vascular supply.

The procedure is done as a day case basis. Patients can go home and go back to their normal daily activities just after 6 hours of the procedure. They are advised to stay for 6 hours just to observe if any complication develops.

Sometimes the exact cause of different neurologic diseases are not completely revealed by investigations like CT scan, MRI or carotid doppler study. They may need cerebral angiogram to correlate with the clinical signs as well as other investigations for proper diagnosis and prognosis.

Dr Hayee told that the main difference of DSA with doppler study is — it can reveal the condition of the collateral supply in the brain. The traditional doppler study can only say the condition of blockage, stenosis and flow, but DSA can reveal completely the collateral status. Dr Hayee also informed — if vascular supply is hampered almost 100 percent and the collateral supply is ok, the patient could be recovered much.

Moreover, the procedure is important in case of taking decision before doing any neurosurgery to know the haemodynamic state of the patient.

Complications or side effects of DSA

Since cerebral DSA is an invasive procedure, certainly it possesses some risks or side effects. But that is very negligible in comparison to the risks that the patients bear with themselves.

"The risks during the procedure could be recovered instantly", assured Dr Hayee. He also informed that there was no case of fatality or huge morbidity among his 500

angiogram (DSA) cases.

Candidates of DSA

Dr Hayee explained that following patients are suitable candidate for cerebral DSA.

Stroke related causes:

- Stroke patients who presents with more than 50 blockage in the carotid system by doppler study
- Stroke at any young age, i.e. stroke at below the age of 45
- Rupture aneurysm (swelling caused by the weakening of a wall of a blood vessel)
- Rupture AVM (arterio venous malformation)
- Unexplained cranial nerve palsy (paralysis of nerves)
- Unexplained ocular proptosis (forward displacement of the eyeball)
- Unexplained unilateral dilatation of the pupil

Non-stroke related causes:

- Skull base tumour e.g. Meningioma
- Different neurologic insult including the fracture of head

What to do after DSA

The next step is dictated by the angiogram. If there is stenosis more than 50 percent, the may be suggested to be stented according to the clinical condition.

Conclusion

Dr Hayee explained well that cerebral angiogram is a sophisticated procedure. But it is very simple for an expert hand.

People had to go abroad earlier to have the procedure which can be done now in the country.



WHO PHOTO

New guidelines to improve psychological and social assistance in emergencies

WHO, Geneva

International humanitarian agencies have agreed on a new set of guidelines to address the mental health and psychosocial needs of survivors as part of the response to conflict or disaster.

The Inter-Agency Standing Committee (IASC) Guidelines on Mental Health and Psychosocial Support in Emergency Settings, clearly state that protecting and promoting mental health and psychosocial well-being is the responsibility of all humanitarian agencies and workers. Until now, many people involved in emergency response have viewed mental health and psychosocial well-being as the sole responsibility of psychiatrists and psychologists.

Recent conflicts and natural disasters in Afghanistan, Indonesia, Sri Lanka and Sudan among many others involve substantial psychological and social suffering in the short term, which if not adequately addressed can lead to long-term mental health and psychosocial problems. These can threaten peace, people's human rights and development.

The guidelines have been published by the IASC, a committee that is responsible for worldwide humanitarian policy and consists of heads of relevant UN and other intergovernmental agencies, Red Cross and Red Crescent agencies, and NGO consortia. The guidelines have been developed by staff from 27 agencies through a highly participatory process.

The guidelines lay out the essen-

tial first steps in protecting or promoting people's mental health and psychosocial well-being in the midst of emergencies. They identify useful practices and flag potentially harmful ones, and clarify how different approaches complement one another.

The guidelines have a clear focus on social interventions and supports. They emphasise the importance of building on local resources such as teachers, health workers, healers, and women's groups to promote psychosocial well-being. They focus on strengthening social networks and building on existing ways community members deal with distress in their lives.

The guidelines include attention to protection and care of people with severe mental disorders, including severe trauma-induced disorders, as well as access to psychological first aid for those in acute distress.

The guidelines stress that the way in which humanitarian aid is provided can have a substantial impact on people's mental health and psychosocial well-being. Treating survivors with dignity and enabling them to participate in and organise emergency support is essential.

Coordination of mental health and psychosocial support is difficult in large emergencies involving numerous agencies. Affected populations can be overwhelmed by outsiders, and local contributions to mental health and psychosocial support are easily marginalised or undermined.

Medical Update

New drug combo could speed TB treatment

REUTERS, Chicago

Adding a new antibiotic to the standard mix of drugs used to treat tuberculosis could shave at least two months off the current grueling six-month regimen, U.S. researchers said.

By substituting the moxifloxacin for an older drug, researchers said they saw a 17 percent increase in effectiveness.

"Our finding shows that moxifloxacin is potent against tuberculosis," Dr. Richard Chaisson of Johns Hopkins University in Baltimore, said. "It shows very dramatically that people get better faster."

Chaisson, who presented his findings at the Interscience Conference on Antimicrobial Agents and Chemotherapy meeting in Chicago, said adding this antibiotic could cut treatment time by about two months.

"If we simplify treatment, it will be easier for people to take the drugs," he said.

People often do not take their full regimen of TB drugs, which has in turn spawned drug resistance, making TB more dangerous and more difficult to treat.

Shortening treatment time could help people stick to the prescribed therapy better and reduce the development of resistant strains, Chaisson said.

Chaisson's eight-week study, which was funded by the U.S. Food and Drug Administration, tested 170 men and women with TB in Brazil. They took the traditional mixture of drugs, which includes the antibiotic ethambutol, or a mix replacing ethambutol with moxifloxacin.

After two months, cultured sputum samples from

moxifloxacin patients were far less likely to grow TB bacteria.

Moxifloxacin is approved for respiratory infections including pneumonia.

TB researchers are already preparing to study this finding in larger clinical trials, with support from the Global Alliance for TB Drug Development.

"We really do hope to shorten therapy to four months," Melvin Spigelman of the alliance told reporters, adding that it will take a number of large trials to get there.



Although typhoid fever, caused by infection with *Salmonella enterica* serovar Typhi (often called *S. typhi*), long ago ceased to be a **public health problem** in industrialised countries, it is still a substantial cause of illness and death in many developing countries.

New England Journal Of Medicine