

WORLD STROKE DAY PROCLAMATION

STROKE: A Preventable and Treatable Catastrophe

The Growing Epidemic : Stroke is Preventable ...but Rising Globally

- Aging, unhealthy diets, tobacco use, physical inactivity, fuel a growing epidemic of high Blood Pressure, High Cholesterol, Obesity, Diabetes, Stroke, Heart disease and Vascular Cognitive impairment.
- Worldwide, stroke accounts for 5.7 million deaths each year and ranks second to Ischemic Heart Disease as a cause of death; it is also a leading cause of serious disability, sparing no age, sex, ethnic origin or country.
- Four out of five strokes occur in low and middle income countries who can least afford to deal with the consequences of stroke.
- If nothing is done, the predicted number of people who will die from stroke will increase to 6.7 million each year by 2015.
- Six million deaths could be averted over the next 10 years if what is already known is applied.
- Much can be done to prevent and treat stroke and rehabilitate those who suffer the devastating consequences of stroke.

World Stroke Day: 29th October 2009

Theme for World Stroke Day Celebration for 2009

Stroke- What can I do?

"World Stroke Organization" is encouraging people all over the world to organize world stroke events. You can register at admin@world-stroke.org World stroke organization will be delivering tools to support this activity and give awards to most innovative activities in different regions.

5th National Congress of Indian Stroke Association & International Stroke Conference (ISA - 2010), March 13-14, New Delhi, India.

Website : www.isa.2010.in
Email : isacon2010@gmail.com

WORLD STROKE DAY CELEBRATIONS-2008

Dr K Prasad, Dr V Padma and Dr R Bhatia All India Institute for Medical Sciences, New Delhi



The World Stroke Day was celebrated on the 29th of October, 2008 at All India Institute of Medical Sciences, New Delhi. A public awareness program was held for disseminating information regarding stroke.

The program focused on various aspects of stroke such as What is stroke, Stroke burden on the society, Types of stroke and Reasons for stroke. The program stressed the importance of recognizing stroke symptoms early and responding to it as an emergency. The concept of "Time is brain", what are the treatment options for stroke, what are "Mini strokes", why we should not ignore them and how do we prevent them were discussed at length.

At the end of the session, a mini quiz was administered to the participants and the answers were discussed. This was followed by very interactive question-answer session. Finally, the top scorers in the quiz were presented with prizes.

Dr P Vijaya

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Heart and Brain Centre, Guntur, Andhra Pradesh



A public awareness program was held on 29th October. Patients and relatives were informed about various aspects of stroke through lectures in the local language. The participants were also given risk factor

All these and many more have constantly propagated the efficacy of one over another but few papers are available in literature regarding the significance of compliance of drug intake with that of stroke prevention. One such study by Ma *et al*^[12] showed that the proportion of patients with ischemic stroke that have not taken any anti-platelet agents, statins and ACEI/ARB were 0.4, 41.8 and 63.6%, respectively.

No matter whichever may be the antiplatelet agent, need of the hour is to establish the importance of regular intake of the same through aggressive public awareness. Sincere efforts are lacking to promote the role of APA's in stroke and not enough has been done to educate people the devastating effects and enormous economic and man power loss secondary to stroke. People in India, very often get inclined to follow alternative medicines such as homeopathy, ayurveda, yoga, meditation and other alternative approaches, thus in this process stop the APA's without physician's advice. In our own hospital-based study, 34% of all re-stroke patients stop their APA's and followed alternative medications as their treatment of preference [Anecdotal report and personal observation]. We strongly suggest that instead of spending billions of dollars on establishing the efficacy of one over another, which is again marginally better over each other, scientific bodies should plan out to work on establishing compliance. As anti-epileptic's compliance is emphasized in all patients, similar approach should be followed in stroke.

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Stroke: Recovery, Repair and Rehabilitation

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Stroke is a condition with unique epidemiological profile, consisting of high incidence and mortality rates, with a large proportion of survivors experiencing a significant amount of residual disability. However, stroke may have different meanings: for patients it is "the end of the road", for family it is "beginning of burden", for physicians it is opportunity for "investigation and intervention", for organizations it is "investment" and for nation it is "loss of disability adjusted life years."

The first question that the family members ask when someone suffers from a stroke is "When is he going to walk". The degree of natural recovery after stroke is variable. However, there are two different but related ways that help the stroke survivor to improve after stroke.

The first type of recovery, reduction in the extent of neurological impairment results from natural spontaneous recovery which usually account for early spontaneous improvement after stroke within first 3-6 months. This form of recovery manifests as improvement in motor control, language ability or other primary neurological functions.

The underlying mechanisms include resolution of local edema, resorption of local toxins, restoration of circulation in ischemic penumbra, and recovery of partial damaged ischemic neurons.

For most stroke survivors, the pattern of spontaneous neurological recovery of motor functions follows a relatively stereotype sequence of events; in which lower extremity function recover earliest and most completely followed by upper extremity and hand function. Return of tone usually precedes return of voluntary movement, proximal control precedes distal control, and mass movement patterns or synergy pattern precedes isolated coordinated volitional motor functions. This sequence of recovery however can stop at any stage.

The second type of recovery demonstrated in stroke survivors is, the improved ability to perform daily functions in their environment, within the limitation of their physical impairment.

The underlying mechanism to explain the second type of recovery is neuroplasticity. Brain plasticity is the ability of the nervous system to modify its structure and functional organization.

The two most plausible forms of plasticity are, collateral sprouting of new synaptic connections and unmasking of previous latent pathways. Other mechanisms of plasticity include assumption of function by undamaged pathways, reverse ability from diaschisis, denervation supersensitivity, remyelination, and regenerative proximal sprouting of transected neuronal axons.

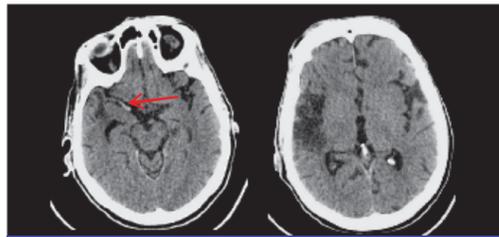
LIVE ENCOUNTERS

Mechanical Clot Retrieval using “Penumbra Stroke System” for Management of Acute Stroke

Dr M Shrivastava, Dr Shirish M Hastak

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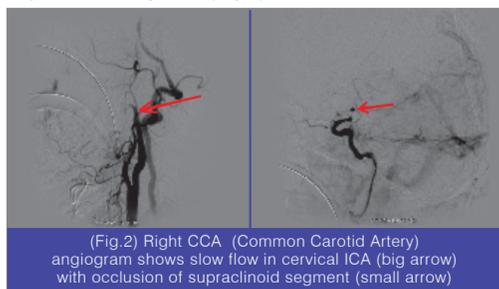
A 70 yrs. old man, came with sudden onset speech disturbance and left sided weakness on 21/05/09. He came to the hospital within 2 hours of the ictus and was 13 days post CABG (Coronary Artery Bypass Surgery). On admission his NIH Stroke Scale was 15 with aphasia / dysarthria, left facial asymmetry, with grade 0/5 power in left upper and lower limbs. Eyes were deviated to the right side with left sided field defect. A plain & contrast enhanced CT Scan showed, right sided dense MCA (Middle Cerebral Artery) sign with old parietal infarct (Fig.1).



(Fig.1) Plain CT Scan shows dense MCA sign on the right side (Arrow) with an old right parietal infarct

Because of his post CABG status, intra venous tPA (Tissue Plasminogen Activator) was contraindicated. Hence, patient was taken up for mechanical clot retrieval using the “Penumbra Stroke System”. After counseling the relatives, patient was taken up for the procedure. Procedure was undertaken 5 hrs. post ictus.

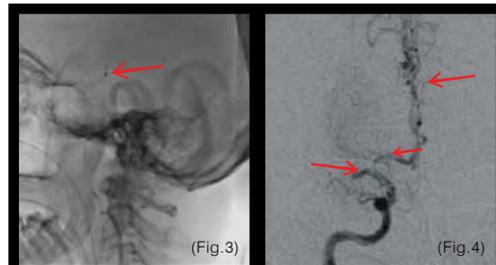
Diagnostic right carotid angiogram was performed as a the first step, which showed sluggish flow in the cervical, petrous and cavernous segment of the ICA (Internal Carotid Artery) with occlusion of the supraclinoid segment (Fig.2).



(Fig.2) Right CCA (Common Carotid Artery) angiogram shows slow flow in cervical ICA (big arrow) with occlusion of supraclinoid segment (small arrow)

0.41 Penumbra aspiration catheter was navigated over the Transend 0.14 wire to the site of occlusion and the separator was introduced into the aspiration catheter. Suction was then applied to it (aspiration catheter) (Fig.3).

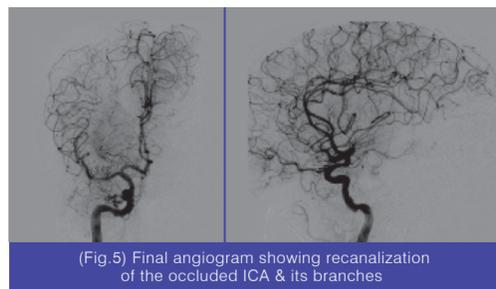
After 5 minutes of suction, a control angiogram was performed, which showed recanalization of the supraclinoid ICA with antegrade flow into the ACA (Anterior Cerebral Artery) and its branches with a filling defect seen in the right M1 segment of the MCA (Fig.4).



(Fig.3) Penumbra (.41) Aspiration catheter with Separator wire (Arrow)

(Fig.4) Flow has been reestablished in right ICA & ACA (Arrows) with occlusion of M1 (Small arrow)

The aspiration catheter was navigated into the occluded M1 segment of the MCA and again suction was applied to it. This was continued for approximately 25 minutes. Following this, control angiogram was performed, which showed recanalization of right MCA and its branches (except for the parietal branches, which supply the previously infarcted area) (Fig.5).

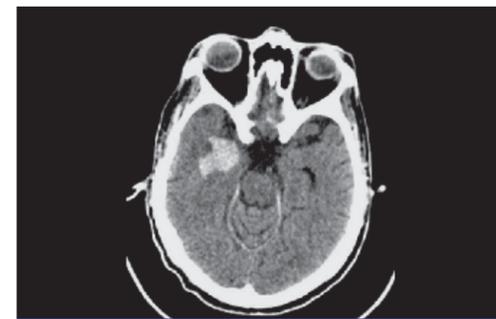


(Fig.5) Final angiogram showing recanalization of the occluded ICA & its branches

Following the clot retrieval, the patient was electively ventilated for 24 hrs. Post extubation, patient had significant neurological recovery and his NIH Stroke Score went down to 5 with complete recovery of speech. The power in the left UL & LL improved to 4/5 with mild, persistent facial and field defect. A 2D Echo was performed, which showed clot in the left ventricle.

ECG showed old MI (Myocardial Infarction) (anterior + inferior). His course in the ward was uneventful. Plain CT Scan showed no new infarct but a small bleed, which did not produce any clinical sequelae (Fig.6).

The patient went home walking after a week.



(Fig.6) 24 hrs. post-procedure CT Scan shows small temporal bleed with no mass effect.

Significance of Family in Stroke Rehabilitation

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Mrs Kausalya, a known hypertensive, aged 65 years sustained right hemiplegia due to left MCA infarction on 14th August 2008 following a laparotomy for an abdominal hysterectomy (for endometrial carcinoma). Her Glasgow Coma Scale (GCS) was 8/15. Her GCS deteriorated to 5/15 and CT scan of the brain showed, compression of ventricles and a massive mid line shift for which, emergency fronto temporo parietal decompressive craniotomy was done. She was kept on mechanical ventilation and subsequently, a tracheostomy was done.



During the post operative period she developed respiratory and urinary infection. She was treated with appropriate antibiotics. She also developed left focal fits for which, appropriate anti epileptic therapy was given. At this time, her GCS was 3/15. Gradually, she became stable without oxygen and was on 16 Ryles tube feeds a day! Her life was saved by timely medical interventions. To the relief of her family on 18th October 2008, she was discharged from hospital.

Her quality of life was gradually enhanced by her devoted family. Over the last 6 months, her family rallied

around her and left no stones turned in rehabilitating her. She has three sons and their wives who ensured that, they took turns in supervising their mother's recovery. She has two nurses to care for her during the day and night shift. Each son kept his mother company two nights a week. Yes, they have a duty roster for that! They took up the challenge like an engineering project; they prepared charts for monitoring the vital signs and medication for the nurses. Hourly passive exercise protocol in concurrence with the physiotherapists were also charted.

The daughters-in-law, personally supervised skin care and perineal hygiene during change of diapers. One of the daughters-in-law, a Dietitian calculated the caloric intake of her food upto 1100 calories. They know the approximate intake of her sodium, calcium and other minerals in her food too. Another daughter-in-law, with a remarkable smile prepares her diet and feeds her with palatable food. The patient, eats pureed food orally and enjoys sweets. All this has been done under the benovolent supervision of the patient's husband. He is a business head, who has philosophically cared for his wife. He ensures caregivers do not get burnt out with negative emotions. Their grand children, constantly flutter in and out of her room singing to her and stimulating her with their conversation. There is a sense of service and affection in their home, along with a combination of modern technology and tradition too. The medical team, who follow her progress at home once a week is a physician and a physiatrist. A neurologist visits her once in two months. Her GCS is 9/15 and Modified Rankin Scale is 5.

Here is a stroke survivor, who is reaping the fruits of the values she had inculcated in her family in the past.



Learning points:

- It is important, to tackle problems with a cool and systematic attitude which makes it easier, to reach the stage of acceptance of a disability.
- Compassion has to be exercised, to make technology more effective.
- Other than the medical attention needed in stroke patients, most important thing is the family acceptance and participation; the cornerstone of successful rehabilitation.

THERAPY INSIGHTS

Can We Marry Telemedicine and Portable CT Scan to Provide Timely Care to Stroke Patients?

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At present, the only treatment recommended for acute ischemic stroke is tPA, provided the patient fulfills the criteria for the same. However, the biggest limitation of such a treatment is its narrow window period.

Only 5% of all eligible patients for tPA, receive the same because of loss of valuable time during transportation of the patient to the hospital as well as while gearing up the stroke team.

One of the most important aspect of such a treatment is to get the CT scan of head done to rule out bleed as well as ascertain the extent of infarct.

This can be attended in a more time saving manner if the patient of stroke is attended by the primary stroke team with portable CT scanner. Once the call comes, then stroke ambulance which is fitted with CT scanner [portable] will reach the site and acquire the images and patient details and transfer the same through the telemedicine set up to main center.

This can be easily achieved, by minor training to the technician dealing with the CT scanner or to the attending nurse doing the patient care. Once the images are acquired and sent through telemedicine, they can be analyzed by the expert to decide whether to inject tPA or not. Once it is done, then patient can be transferred to the tertiary care center, during or after receiving tPA. CT angiography and other sophisticated images including perfusion and diffusion studies, can also be acquired by such portable scanner, however, they can be taken up during or after transportation of the patient.

Marriage of these two, (Telemedicine and Portable CT scanner) will certainly help to promote the stroke care by extending this therapeutic option even to taluka level.

Once such facilities are made available, then this care can be extended to villages and small towns where the biggest limitation is lack of man power and lack of CT scan facilities.

Awareness amongst the stroke care team, and direct promotion by the government and other NGO bodies will help to achieve the same.

Misplaced Emphasis on Choice of Antiplatelet Agents in Secondary Stroke Prevention vs Compliance?

Dr P K Sethi , Dr B K Mishra

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Long-term treatment with antiplatelet agents (APA), is an important strategy for secondary prevention of ischemic stroke and other major athero-sclerotic events. Several well-designed multicenter multinational trials, have been conducted in past to establish the efficacy of one over the other APA's in preventing the same. Still the debate is on. After completion of study, several comments are made and another mega trial is planned to support or counteract, the claim of each trial. However, no trials are conducted as of yet, to assess the significance of lack of compliance versus rate of stroke and awareness of stroke prevention with regular medicine use. Efficacy of aspirin in preventing secondary stroke was established years before. Several antiplatelet agents have been used to prevent recurrence,^[1] each having different mechanisms for inhibiting platelets. The aspirin, irreversibly inhibits cyclo-oxygenase and reduce the relative risk of stroke recurrence by 15–20% across a wide range of trials.^[2] Clopidogrel (a pro-drug which antagonizes ADP receptors), showed a slight benefit over aspirin in a mixed population of patients with vascular disease; no difference was seen in the sub-group of patients with prior Ischemic stroke.^[3] Dipyridamole, an inhibitor of phosphodiesterase and adenosine uptake by platelets, had comparable efficacy to aspirin in one trial.^[4] Dual therapy with the combination of aspirin and dipyridamole, was superior to aspirin alone in preventing stroke recurrence with relative risk reduction of about 24%^{[4],[5]} and had twice the efficacy of mono-therapy when compared with placebo.^{[4],[6]} Although, the combination of aspirin and clopidogrel was superior to aspirin alone in preventing vascular events in cardiac patients with unstable angina or requiring percutaneous coronary intervention,^{[7],[8]} it showed no overall benefit in patients with stable vascular disease or at risk of developing a first vascular event.^[9] However, two small trials involving patients at high risk of stroke recurrence suggested that combined aspirin and clopidogrel were superior to aspirin alone.^{[10],[11]}

Antiplatelet Agents	Relative risk reduction (RRR) in secondary stroke prevention
Aspirin	18%
Aspirin & Dipyridamole	20-24%
Clopidogrel vs Aspirin	8.7%
Clopidogrel vs Aspirin and Clopidogrel	6.4 %

questionnaire for self assessment following which, a free check-up and counseling was given to high risk patients and relatives.

Banners were put up in various parts of city about "World Stroke Day" highlighting the theme. There was a good coverage in the local Newspapers and Television. Information regarding thrombolysis and early referral were sent to the local Physicians and General practitioners. Lectures were given in the Indian Medical Association meeting regarding "Advances in Stroke". Following the World Stroke Day celebrations many patients with mild cognitive impairment came voluntarily for the check-up.

Dr J D Pandian

Stroke Unit, Christian Medical College, Ludhiana

The World Stroke Day was celebrated on 30th October due to the National festival Diwali on 28th. There was an educational program organized by the College of Nursing, College of Physiotherapy, Department of Dietetics and Neurology. The participants were patients and their care givers.



The nursing students from the College of Nursing displayed posters on the various aspects of stroke presentation, diagnosis and treatment. The play put up by the nursing students was educative to the public in the early recognition of stroke symptoms. The play also stressed the importance of different treatments available to prevent stroke. Stroke Unit Dietician spoke about the diet and its relationship with stroke. The importance of "Well balanced diet" was stressed. The students of College of Physiotherapy put up a play on the importance of physiotherapy during stroke recovery.

Ambulance and Mobile Accident Rescue Services (AMARS) crew members, educated the patients and the relatives about the importance of early recognition of stroke symptoms. They also urged the public to dial 104 for free ambulance pick up to reach the hospital during the window period.

A free medical check-up was held for people with high risk for stroke. Approximately, 150 people attended the free camp.

Brig Dr S Rohatgi, Col Dr S P Gorthi, Lt Col Dr K M Hassan

Command Hospital, Armed Forces Medical College, Pune

Awareness lectures were held for the faculty and the registrars of the hospital on 29th October. A press release highlighted the importance of "World Stroke Day" and a newly formed stroke protocol was publicized.

The protocol consists of formation of a new stroke team, comprising an emergency care Physician, Neurologist, Radiologist, Interventional Radiologist, Neurosurgeon, Critical care specialist and specially trained nursing and paramedical staff. Thrombolysis treatment has been initiated in a dedicated stroke unit since February 2008. This protocol will also be initiated in other army hospitals.



UPCOMING STROKE CONFERENCES

July 22 - 24, 2009 Alexandria, Egypt	2 nd Intl Congress of The Egyptian Cerebro-Cardio-Vascular Association (ECCVA) www.eccvc2009.com
September 24 - 26, 2009 Tbilisi, Georgia	4 th WSO Regional Meeting in Tbilisi Contact: Alexander Tsiskaridze, Chairman o the Organizing Committee
October 24 - 30, 2009 Bangkok, Thailand	19 th World Congress of Neurology www.wcn2009bangkok.com email: tsisk@gol.geional
March 13 -14, 2010 New Delhi, India	5 th National Congress of Indian Stroke Association & International Stroke Conference (ISA 2010) Website: www.isa.2010.in email : isacon2010@gmail.com
April 4 - 6, 2010 Berlin, Germany	The 3 rd International Conference on Hypertension, Lipids, Diabetes & Stroke Prevention
April 22 - 24, 2010 Boston, Massachusetts	27 th Princeton Conference on Cerebro-vascular Disease
June 7 - 8, 2010 Quebec City, Quebec	1 st Canadian Stroke Congress
October 13 - 16, 2010 Seoul, Korea	7 th World Stroke Congress