Editorial
March 8th was World Kidney Day which served to increase awareness of kidney disease and educate persons at risk regarding the importance of prevention and early detection. The theme this year was “Are your kidneys OK?” Patients with hypertension, diabetes, and family history of chronic kidney disease (CKD) , are at greater risk for kidney disease If detected early, CKD can be treated, thereby reducing other complications. We play an important role in early detection and prevention of CKD. Screening and proper treatment of hypertension, through drug therapy and dietary and lifestyle changes, control of blood sugar, dyslipidemias , performing urine test for microalbuminuria and estimated glomerular filtration rate (eGFR) , regular monitoring of kidney function and patient education are areas which we need to focus on in day to day practice to reduce the burden of CKD.
Presented in this issue are some of the recent advances in Parkinson’s disease and glaucoma as also some of the newer surgical techniques in vascular and neurosurgery.
Dr. Ramesh Subramanian
Editor

INVEST IN HEALTH, BUILD A SAFER FUTURE

The theme for this years World Health Day (7th April) is international health security. The aim of the Day is to urge governments, organizations and businesses to "*Invest in health, build a safer future*".
When a disease outbreak strikes, WHO ensures that countries have rapid access to experts and resources for outbreak response through the Global Outbreak Alert & Response Network (GOARN).
The global outbreak alert and response network contributes towards global health security by:

- combating the international spread of outbreaks
- ensuring that appropriate technical assistance reaches affected states rapidly
- contributing to long-term epidemic preparedness and capacity building.

The Guiding principles of international outbreak alert and response aim to improve the coordination of international assistance in support of local efforts by partners in the global outbreak alert and response network
WHO ensures outbreaks of potential international importance are rapidly verified and information is quickly shared within the network.

- There is a rapid response coordinated by the Operational Support Team to requests for assistance from affected state(s)
- The most appropriate experts reach the field in the least possible time to carry out coordinated and effective outbreak control activities
- The international team integrates and coordinates activities to support national efforts and existing public health infrastructure
- There is a fair and equitable process for the participation of Network partners in international responses.
- Health security challenges and find solutions for how partners can work together to prepare for and respond to acute threats to health

http://www.who.int/csr/outbreaknetwork/guidingprinciples/en/index.html
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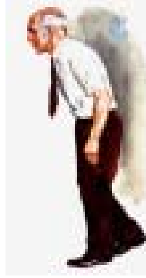
RECENT ADVANCES IN NEUROLOGY

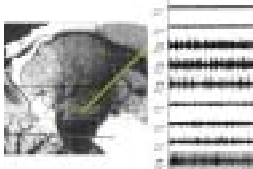
Col. 1, 2

SURGERY FOR PARKINSON'S DISEASE



With the help of stereotactic neurosurgery Parkinson's disease patients can be effectively treated. There are two types of stereotactic procedures available

Deep brain stimulation surgery



Chronic deep brain stimulation surgery is a rapidly emerging therapy for advanced Parkinson's disease . Deep brain stimulation surgery technique involves implanting electrodes inside the deep nuclei of brain called as subthalamus. These electrodes are then connected to IPG (Pacemaker) implanted underneath the skin below the clavicle through the connecting leads. To perform any kind of activity, the patient has to switch on the device with the help of a patient programmer. This stimulates the deep brain nuclei, which results to regression of tremor and stiffness. The pacemaker can be switched off when not required

With the progress of the disease the parameters of stimulation are changed over a period of time so that patients can remain symptom free for long period of time. The patient himself can change the stimulation parameters with the help of patient programmer. Normally the life of the pacemaker is five years and after that a new pacemaker replaces it. The electrodes remain in position for life long. The stimulation of subthalamic nucleus through this device leads to improvement in all the symptoms of advanced Parkinson's disease. Implanting the brain electrode in vim nucleus of thalamus can effectively treat all the types of tremor.

Advantages of deep brain stimulation surgery

1. Non destructive Does not necessitate making lesion (Breaking of little brain circuit) in the brain and hence no side effect
2. Completely reversible Patient will come back in same condition once the device is switched off.
3. Deep brain stimulation surgery is fully programmable
4. Reduction of anti-Parkinson's medication There is significant reduction of anti-Parkinson's medication (50-75%) after stimulation and hence there is improvement in all drug induced side effects like abnormal movements, hallucinations and BP fluctuation etc
5. Bilateral procedures can be performed at the same sitting
6. There is improvement of quality of life in both off and on stage of the disease

Pallidotomy

Patients with advanced hemi Parkinson's disease (symptoms either unilateral or more on one side) are good candidates for Pallidotomy. Pallidotomy is usually successful in reducing some but not all symptoms in Parkinson's disease. In Pallidotomy , a small thermo coagulation (circuit break) is done at postero-ventral part of Pallidum. Pallidotomy helps the patient on the controlateral side of surgery. It improves tremor, stiffness and drug induced side effects of dyskinesia.

Pallidotomy is performed under local anesthesia using stereotaxy. Bilateral Pallidotomy is also possible but is avoided in lieu of more side effects related to surgery.

http://parkinsonindia.org/parkinsonsdisease.htm

Col 3

MIGRAINE PREVENTION CONSENSUS STATEMENT

- Migraine is a chronic disorder, rather than an episodic disorder. Healthcare professionals treating patients with migraine must be educated about recent advances in the understanding of migraine and current treatment options.
- Proper use of acute medications is essential to maximize their efficacy. Acute medications should be taken at the first sign of migraine (or during the aura, if present).
- Acute medication is not always adequate to control migraine attacks. Preventive therapy should be considered in patients requiring acute medication more than two days per week and in those experiencing frequent disability during and between migraine attacks.
- Healthcare professionals need to determine patient disability and the total level of impairment migraine has on a patient's life, both during and between attacks, to better assess when patients may be appropriate candidates for preventive therapy. In addition, it is important to recognize how migraine affects other aspects of the patient's life, such as family and work life.
- Preventive therapies include both medications and behavioral modifications. Patients need realistic expectations about treatment outcome, specifically time to response. Preventive therapies may take six weeks or longer to reach clinical effect. In addition, patients should be counseled on what side effects to expect and should be dosed and titrated slowly to the target dose.
- Patients are important partners in the management of migraine. Open communication about treatment options and healthcare professional-patient support is essential to ensure treatment plans are followed. Adherence to treatment regimens, including both lifestyle changes and medications, is necessary to achieve optimal effect.
- Migraine is a manageable disease. With communication and cooperation between patients and healthcare professionals, most patients can achieve greater control of their disease and reduce their disability.

The US National Headache Foundation (NHF) consensus statement on migraine prevention , Migraine Prevention Summit, January, 2007

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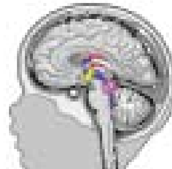
Col 1

ENDOSCOPIC THIRD VENTRICULOSTOMY



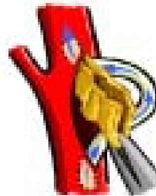
- Endoscopic third ventriculostomy (ETV) is a relatively new surgical procedure for the treatment of hydrocephalus. The procedure allows free flow of spinal fluid into the basal cisterns for absorption
- A small incision is made in the scalp and a small hole in the skull. Through this hole a AN endoscope) is inserted to view the ventricles and the obstruction) A hole is created in the floor of the third ventricle, usually larger than the laser. The hole is then dilated using a catheter with an inflatable balloon. This creates a detour around the blockage to allow the CSF to circulate and be reabsorbed. The operation will take about two hours. In some cases, a temporary ventriculostomy

will be left in the ventricle to monitor intracranial pressure (ICP) for two or three days. This helps evaluate the success of the third ventriculostomy

- ETV is appropriate for treating obstructive (noncommunicating) hydrocephalus. It is controversial as to whether it is effective in treating non-obstructive (communicating) hydrocephalus, although some neurosurgeons have used it successfully in these cases. In order to perform the procedure, the ventricles must be large enough to see the appropriate brain structures
- Many neurosurgeons do not perform ETV on children below the age of two years because the failure rate is higher than for older children
- Five-year patency rates of ETV are in the 50-80 percent rage, depending on the anatomy of the child and the cause of hydrocephalus
- The initial complication rate of ETV is higher than that for shunt placement, but, if successful, the procedure eliminates the need for a shunt as well as the associated risks of shunt malfunction

Col 2

CAROTID ENDARTERECTOMY

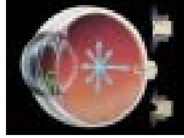


- Carotid endarterectomy is a surgical procedure used to correct carotid stenosis used particularly when this causes transient ischemic attacks (TIAs) or cerebrovascular accidents (CVAs, strokes)
- The internal, common and external carotid arteries are clamped, the lumen of the internal carotid artery is opened, and the atheromatous plaque substance removed. The artery is closed, hemostasis achieved, and the overlying layers closed. Many surgeons lay a temporary shunt to ensure blood supply to the brain during the procedure. The procedure may be performed under general or local anaesthesia
- Carotid endarterectomy is beneficial for symptomatic patients with recent nondisabling carotid artery ischemic events and ipsilateral 70% to 99% carotid artery stenosis (Grade A recommendation)
- Carotid endarterectomy is not beneficial for symptomatic patients with 0% to 29% stenosis (Grade A recommendation)
- There is yet uncertainty about the potential benefit of carotid endarterectomy for symptomatic patients with 30% to 69% stenosis
- Current guidelines do not support surgery for patients with <50% stenosis outside a randomized study
- Carotid endarterectomy for patients with severe but asymptomatic disease can also provide an opportunity to reduce the risk of stroke. However, since the risk-benefit ratio is much smaller in these cases, the comorbid conditions and patient preferences need to be factored into the decision making
- For both symptomatic and asymptomatic carotid artery stenosis, the surgeon should be experienced in performing carotid endarterectomy and should have surgical outcomes similar to those of the surgeons who participated in the carotid endarterectomy trials
- Carotid angioplasty with or without stenting is still being evaluated in clinical trials to determine its role in reducing the risk of stroke in patients with carotid artery stenosis

http://www.postgradmed.com/issues/2000/05_00/ingall_dodick.htm

Col 3

ADVANCES IN GLAUCOMA MANAGEMENT



Medical advances:

The following eye *drops* can be used to lower *intraocular pressure* more safely and effectively than ever before.

- Carbonic anhydrase inhibitors such as dorzolamide and brinzolamide
- Alpha 2 agonists such as apraclonidine and brimonidine
- Prostaglandin analogues such as latanaprost, travaprost, and bimatoprost (bimatoprost is believed to be a prostamide which acts on different receptors, but studies are still ongoing in this field)

Laser advances:

New advances in laser therapy include:

- Selective laser *trabeculoplasty*. ALT (argon laser trabeculoplasty) or SLT (selective laser trabeculoplasty) that helps open up the drainage angle and allow more fluid to pass out of the eye
- Trans *sclera*ldiode *cyclophotocoagulation*
- Endoscopic *cyclophotocoagulation*

Surgical advances:

New advances in surgical therapy include:

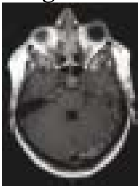
- Improvements in cataract surgery techniques such as *phacoemulsification* and foldable intraocular *lens* implants that allow cataracts to be easily removed in glaucoma patients (either alone or in combination with glaucoma surgery)
- Non-penetrating *trabeculectomy* (viscocanalostomy, collagen wick device etc). This class of surgeries tries to improve the drainage of aqueous fluid without entering the *anterior chamber* of the eye. This technique greatly reduces risk of *hypotony* (low pressure after surgery), bleeding and inflammation or infection. Although short-term success rates seem promising, long-term success remains unproven.
- New fluid drainage devices, such as the Ahmed and Krupin valve. These have a built-in resistance device so that, in theory, there is less problem with low eye pressure following surgery.

Other advances:

- Neuroprotection. A new class of medications being developed directly protects the *ganglion cells* and *optic nerve* . At present, there is some evidence in animal models of optic nerve injury that betaxolol and brimonidine may prevent ganglion cells from dying. However this remains to be proven among humans.

QUIZ MANIA 64

Diagnosis??



ANSWER TO QUIZ MANIA 63

Neuro cysticercosis

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Journal Scan

TRIPLE-DRUG COMBO FOR COPD REDUCES HOSPITALIZATIONS, IMPROVES LUNG FUNCTION

For patients with chronic obstructive pulmonary disease (COPD), treatment with three inhaled medications -- corticosteroids, beta-agonists, and anticholinergic bronchodilators -- improves lung function and decreases hospitalizations, compared with an anticholinergic agent alone. .
A randomized, double-blind study was conducted , involving 449 patients with moderate to severe COPD enrolled at 27 medical centers in Canada. Subjects were randomly assigned to one of three treatment arms for 52 weeks: the anticholinergic tiotropium 18 g daily plus placebo; tiotropium plus the long-acting beta-2 agonist salmeterol (25 g/puff, 2 puffs twice daily; or tiotropium plus the combination of the corticosteroid fluticasone and salmeterol 250/25 g/puff, 2 puffs twice daily. There were 156, 148, and 145 patients in each arm of the study. Patients had to quit using other drugs in the same classes, although they could continue other respiratory therapies, such as oxygen, antileukotrienes, and methylxanthines.
Hospitalizations to treat severe COPD exacerbations were significantly decreased by triple treatment. The incidence rate ratio was 0.53 compared with tiotropium alone ($p = 0.01$). Salmeterol plus tiotropium did not differ significantly compared with single agent treatment. All-cause hospitalizations were also less frequent in the triple-treatment group.
Using three drugs was more effective in improving forced expiratory volume in one second (FEV1) than tiotropium alone. The absolute pre-bronchodilator FEV1 increased by 0.027 L in the tiotropium group and by 0.086 L in the group using all three drugs ($p = 0.049$).
The two- and three-agent treatments were each significantly more effective in improving health-related quality of life, the investigators report.
However, the three treatment groups did not differ significantly in the primary outcome measure -- the number of patients who had at least one exacerbation.
"Although the addition of fluticasone-salmeterol to tiotropium therapy did not affect overall exacerbation rates, combined therapy of tiotropium plus fluticasone-salmeterol may modify the severity of exacerbations, so that these patients may be less likely to require hospitalization when they do experience exacerbations," the authors state.
Shawn D. Aaron et al, Ann Intern Med , 2007.

Medinews

HIGH VEGETABLE INTAKE LINKED TO LOWER RISK FOR BPH

Men who have a high intake of vegetables, particularly those rich in beta-carotene, had a reduced risk for benign prostatic hyperplasia (BPH), according to the results of a study reported in the February issue of the *American Journal of Clinical Nutrition*.
Nutrients with antioxidant properties or that influence cell growth and differentiation might reduce the risk of benign prostatic hyperplasia (BPH

- The study cohort comprised a total of 51,529 health professionals between the ages of 40 and 75 years in 1986
- The main study outcome was the relationship between consumption of fruits, vegetables, and micronutrients and BPH, which was defined by symptom scores of 15 or higher, the use of

medications to treat BPH, or surgical treatment of BPH. Control subjects had not received treatment of BPH and had symptom scores of 7 or below. The relationship between diet and BPH was adjusted for age, race, ethnicity, cigarette smoking, leisure-time physical activity, alcohol consumption, and other dietary habits

- 32,265 subjects were included in the analysis, and 6092 were found to have BPH.
- Men who consumed more fruits and vegetables were older, less likely to smoke cigarettes and drink alcohol, and more likely to use multivitamins and exercise
- Total consumption of fruits and vegetables did not significantly affect the risk for BPH nor did the consumption of fruit. However, comparing the highest quintile of vegetable consumption with the lowest quintile reduced the risk for BPH by 11%
- In particular, raw spinach, peaches, legumes, and cruciferous vegetables reduced the risk for BPH.
- In terms of micronutrients, consuming fruits and vegetables rich in beta-carotene, lutein, and vitamin C reduced the risk for BPH (odds ratios for the highest quintile of intake of these micronutrients vs the lowest quintile: 0.87, 0.83, and 0.89, respectively). However, consumption of fruits and vegetables rich in lycopene did not affect the risk for BPH
- Consumption of foods rich in alpha-tocopherol, but not gamma-tocopherol, was marginally associated with a reduced risk for BPH
- The use of vitamin C supplements had no significant effect on the risk for BPH.
- The study's main findings were not significantly altered by adjusting for intake of polyunsaturated fatty acids, although foods rich in vitamin C were most effective in reducing the risk for BPH among subjects with a high intake of polyunsaturated fatty acids

Highlight

- The current study demonstrates that vegetable intake, but not fruit consumption, reduces the risk for BPH.

Am J Clin Nutr. 2007;85:523-529.

Know the drug

TOLTERODINE L TATARATE

It is a drug, mainly useful for bladder dysfunction.

Indications:

· For overactive bladder, with symptoms of urge urinary incontinence like urgency and frequency.

Mechanism of action:

It is a highly specific competitive muscarinic receptor antagonist having a pronounced effect on bladder function.

Dose and method of administration:

4mg. once daily, swallowed whole with liquids.

2mg. once daily, for those, who has reduced hepatic or renal function or on drugs which inhibit enzyme CYP3A4.

Contraindications:

1. Hypersensitivity to the drug or its ingredients.
2. Urinary retention.
3. Gastric retention
4. Uncontrolled narrow–angle glaucoma

Warning and Special precautions:

· Bladder outflow obstruction.

· Pyloric stenosis.

- Patients being treated for narrow–angle glaucoma.
- Reduced hepatic or renal function.
- Safety in pregnancy and lactation not established.
- Not to drive a vehicle or handle machine if they feel drowsy.

Adverse effects:

- Dry mouth
- Headache and fatigue
- Constipation and abdominal pain
- Xeropthalmia
- Somnolence and anxiety
- Anaphylactic reaction

Drug Interactions:

Lower dose of 2mg. is recommended with following drugs.

- Ketoconazole, itraconazole, miconazole
- Macrolide antibiotics like erythromycin & clarithromycin
- Cyclosporine or Vinblastine

Ref.: product insert

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