CIMS-CON 2012
January 6-8, 2012
Education For Innovation

CIMS-CON DAILY

Friday, January 6, 2012 - Day-1

Today's Highlights

Satellite Sessions

- Cardiac Pharmacology- I & II
- Imaging / Diagnostics / Therapeutics
- Peripheral Vascular Disease
- Cardiology Guidelines
- Year in Cardiology / Cardiac Surgery- What Physicians Should Know

TODAY'S WEATHER

Sunrise : 7.24 AM

Sunset : 6.05 PM

Max
27^{0}C

Min
13^{0}C

Advanced Communication Technologies offer Newer Platforms for Medical Information: Keyur Parikh enters the cloud

Communication strategies and technology continue to change at an increasingly rapid rate affecting all aspects of society. Personal Digital Assistant (PDAs) and tablets are replacing computers not only because of their portability, but also because of the many applications they offer for multitasking and overall rapid communication using one of several techniques (phone call, e-mail, text, and so on).

The trend for the future of documentation, both for professionals and enterprises, is the "cloud computing", which develops and updates all documents using various equipments like computer, palm, net book,

iPad, without a software installed on the computer. Today's sporadically available clinical information technology will soon be in routine clinical use, bringing many changes to healthcare. For example, the next generation Internet; real-time clinical decision support systems; off-line population-based systems; large, integrated, individual patient-level phenotypic and genotypic databases with intelligent data mining capabilities; wireless, invasive and non-invasive physiologic monitoring devices etc. will significantly impact healthcare delivery system. Acknowledging Steve Jobs who introduced the ipad in 2010 and development of ipad/iphone Apps relating to various medical information including Human Body 3D Anatomy, Medical Lab Test, and ECG Guide will help streamline processes providing doctors and other healthcare professionals the tools required for diagnoses and treatment.

The exchange of information, comments and criticisms will be performed in real time, providing agility in science disclosure.

The continued evolution of this cloud computing will permeate to CIMSCON, you and me.

A-Z Trials of 2011 in Cardiology

Dr. Milan Chag, Managing Director of CIMS Hospital will discuss a few landmark trials that have contributed to the pathogenesis of the cardiovascular disease process, thereby changing our day to day clinical practice.

I. Eplerenone in Patients with Systolic Heart Failure and Mild Symptoms : EMPHASIS HF Study: (Faiez Zannad et al. N Engl J Med 2011;364:11-21)

In this randomized, double-blind trial, 2737 patients were randomly assigned with New York Heart Association class II heart failure and an ejection fraction of no more than 35% to receive eplerenone- a mineralocorticoid antagonists (up to 50 mg daily) or placebo, in addition to recommended therapy. Eplerenone, as compared with placebo, reduced both the risk of death and the risk of hospitalization among patients with systolic heart failure and mild symptoms.

II. Safety and efficacy of dalcetrapib on atherosclerotic disease using novel non-invasive multimodality imaging: a randomised clinical trial: dal PLAQUE trial: (Zahi A Fayad et al. Lancet 2011; 378: 1547–59)

dal-PLAQUE is the first multicentre study using novel non-invasive multimodality imaging to assess structural and inflammatory indices of atherosclerosis as primary endpoints. Dalcetrapib modulates cholesteryl ester transfer protein (CETP) activity to raise HDL-C. Dalcetrapib showed no evidence of a pathological effect related to the arterial wall over 24 months besides depicting beneficial vascular effects including the reduction in total vessel enlargement over 24 months. However, long-term safety and clinical outcome efficacy of dalcetrapib need to be analyzed.

Continued on page-2...

... Page-1 Continue

III. ***A Prospective Natural-History Study of Coronary Atherosclerosis: PROSPECT study. (Gregg Stone et al. N Engl J Med 2011;364:226-35)***

PROSPECT study revealed that in ACS patients who underwent PCI, major adverse cardiovascular events occurring during follow-up were equally attributable to recurrence at the site of culprit lesions and to nonculprit lesions which were thin-cap fibroatheromas or were characterized by a large plaque burden, a small luminal area, or some combination of these characteristics, as determined by gray-scale and radiofrequency intravascular ultrasonography.

IV. ***Rivaroxaban in Patients with a Recent Acute Coronary Syndrome: ATLAS ACS 2–TIMI 51 Investigators. (Jessica L. Mega et al. N Engl J Med 2011, Nov 13.)***

In patients with a recent ACS, rivaroxaban- the inhibitor of factor Xa reduced the risk of the composite end point of death from cardiovascular causes, myocardial infarction, or stroke. Rivaroxaban increased the risk of major bleeding and intracranial hemorrhage but not the risk of fatal bleeding.

V. ***Effect of Two Intensive Statin Regimens on Progression of Coronary Disease. SATURN. (Stephen J. Nicholls et al. N Engl J Med 2011, Nov 15)***

Serial intravascular ultrasonography in 1039 patients with coronary disease, at baseline and after 104 weeks of treatment with either atorvastatin 80 mg daily or rosuvastatin 40 mg daily resulted in significant regression of coronary atherosclerosis with maximal doses of rosuvastatin and atorvastatin. Despite the lower level of LDL-C and the higher level of HDL achieved with rosuvastatin, a similar degree of regression of percent atheroma volume (PAV) was observed in the two treatment groups.

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The Year in Cardiac Surgery | Today Satellite Session

Dr. Dipesh Shah, CIMS Hospital, Ahmedabad

Robotic surgery and anastomotic devices have further revolutionized the concept of minimally invasive cardiac surgery. Gene therapy and stem cell transplantation for neoangiogenesis are also being studied and applied. Atrial fibrillation is now routinely performed with various less invasive approaches and different energy sources. More and more mitral valve repairs and replacement, atrial septal defect closures are being done through the minimally invasive technique via a mini left thoracotomy. With the evolution of the technology the VADS are getting smaller and smaller which allows Stage III-B and stage IV heart failure patients being treated with ventricular assist devices as destination therapy. The surgical management of heart failure is rapidly advancing with the options of passive and active constraint, ventricular restoration and biventricular pacing through placement of left lateral free wall leads. Transapical transcatheter aortic valve implantation has recently become a suitable technique for high-risk and elderly patients with severe aortic stenosis. Hybrid procedures for coronary revascularization and ablative treatment for AF are in vogue and on the rise. All the eligible patients should be offered with the option of Cardiac surgery when possible so that they can get best available care.

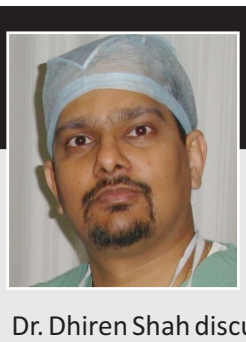
Don't Miss Tomorrow

Saga of ECG Continues... *Tomorrow 7.30 am*

Interactive ECGs / Enjoying arrythmias with Dr. Ajay Naik, MD, DM, DNB, FACC, FHRS, Interventional Cardiac Electrophysiologist and Interventional Cardiologist, Director, CIMS Hospital.

Interpretation of an ECG requires a fair amount of education and experience. This interactive session will help any healthcare worker who needs to read and accurately interpret ECGs, for the novice practitioner or for the more experienced practitioner who wishes to revise their knowledge and update their skills in ECG interpretation.

MICS and Hybrid Surgery a Revolution in Making..



Dr Dhiren Shah

(M.B, M.S, M.CH)

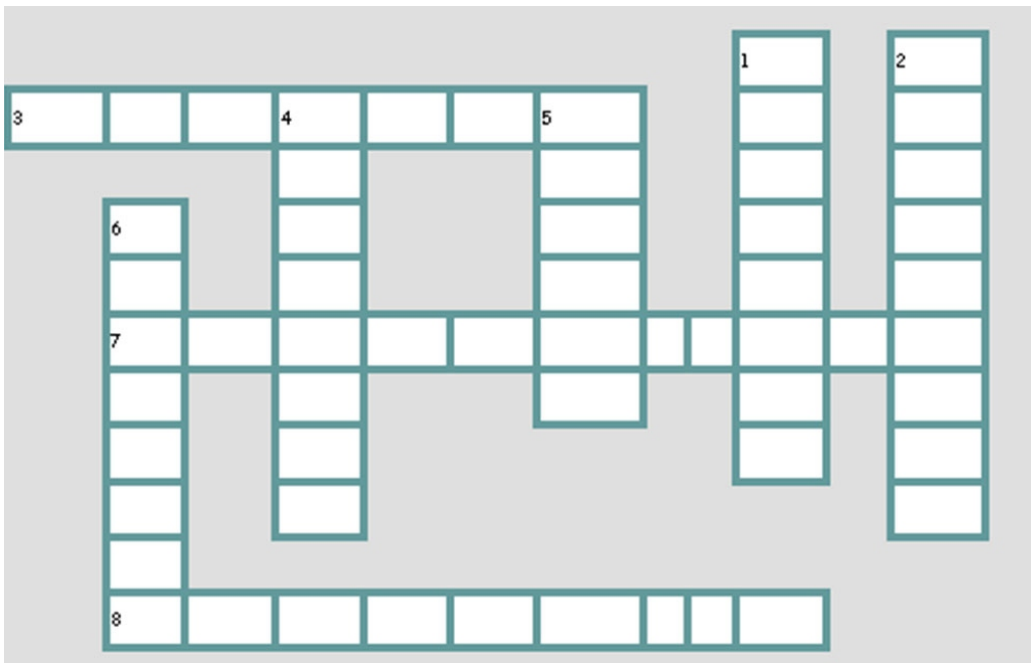
Cardiothoracic Surgeon, CIMS hospital.

Dr. Dhiren Shah discusses the future of Cardiac Surgery. ***Tomorrow 11.55 am***

A heart surgery which involves only a short 3-4 inch incision in the side of chest and which is also fast and pain free with quick recovery from the hospital within 3-4 days is possible nowadays using advanced key hole (called minimal access technique in medical terminology) and hybrid cardiac surgery which also avoids the usage of heart lung machine. The treatment of heart diseases has seen many major advances over the last decade in so many ways, that now major heart surgeries like bypass surgery, angioplasty, closure of holes in children and valve surgeries have become very easy, safe with predictable outcomes. One of the problems of traditional heart surgery was that - the heart was approached by cutting open the sternal bone. Hence the incision (called sternotomy) would be long and extends from near the neck to the upper abdomen. This creates many problems for the individual like cosmetic i.e. affects the physical appearance of chest (which is of special significance to women).

Also the long scar creates psychological problems like loss of confidence and also mild chronic nerve related pain. Also this long scar takes a long time to heal. Use of heart lung machine in heart surgery is also associated with many problems like bleeding during heart operations, prolonged recovery time from the ICU etc. Cardiologists and cardiac surgeons have been working together to overcome these two main problems associated with traditional heart surgery i.e. use of heart lung machine and need for sternotomy and long incisions. This has led to the introduction of "key hole and hybrid heart surgeries".

Cross word



3. AcrossDizziness, insomnia, anxiety, confustion, stroke, hypotension, visual _____, GI/GU effects, cough, upper respiratory infection, myalgia, many other various but less common side effects
7. Relax the vessels of the heart muscle by blocking sympathetic conduction at beta receptors on the SA node and myocardial cells, producing a decline in the force of _____ and a reduction in heart rate, decrease in BP and myocardial O2 demand, angina
8. To increase the excretion of Na and water and control high pressure and fluid _____Down
1. Easily bruising, joint or abdominal pain, difficulty in breathing or swallowing, paralysis, unexplained _____, unusual or uncontrolled bleeding, rib and vertebral fractures
2. Headache, _____, orthostatic hypotension, tachycardia
4. Persistent, dry cough, skin rash, loss of taste, weakness, headache, palpitations, incdrease of swellikng of feet or abdomen, increrase in dizziness or fainting (due to low BP) _____ or tingling of the hands, feet or lips renal failure
5. Insomnia, nausea, fatigue, slow pulse, weakness, increased cholesterol and blood glucose levels, nightmares, depression, _____ dysfunction, asthmatic attack, dizziness
6. Angiotensin _____ Antagonists Indications

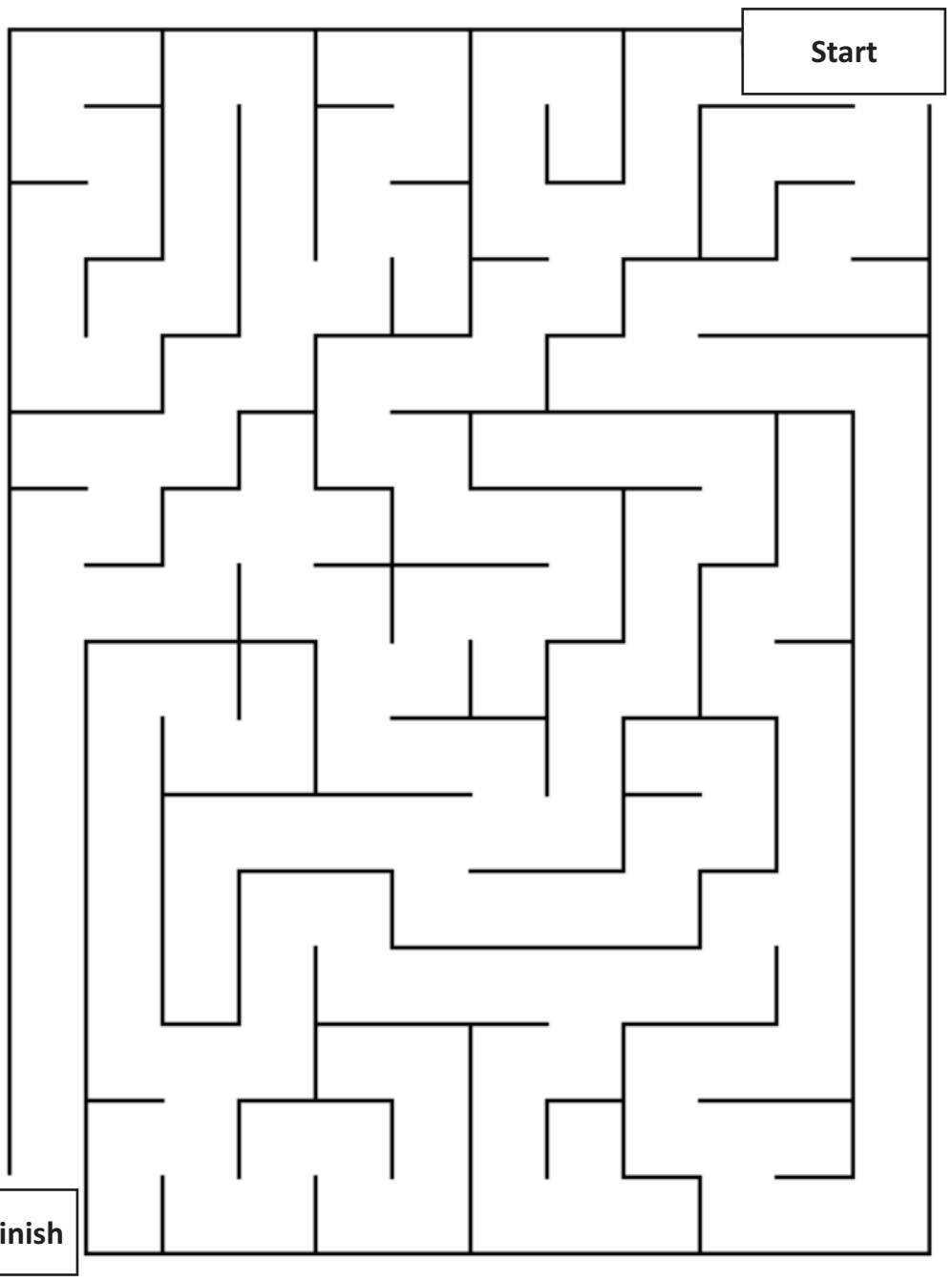
Solution on page no. 7

Acute Myocardial Infarction: From Pathophysiology to Therapeutic Targets

Guy Heyndrickx MD, PhD,
Cardiovascular Center
Aalst, Belgium

Prof. Guy Heyndrickx introduced the concept of myocardial stunning. Mitochondrial permeability transition pores (mPTP) have recently been identified as a major cause for cell death and reperfusion injury. A sudden release of reactive oxygen species and calcium overload at the time of maximal hyperemia during reperfusion results in opening of the mPTP which are closed during ischemia. On opening of mPTP, uncoupling of oxidative phosphorylation, ATP depletion, mitochondrial swelling and necrotic cell death are observed. Controlled, slow reperfusion as opposed to abrupt reperfusion delays recovery of intracellular acidosis by inhibiting the sodium-hydrogen pump which protects the mPTP from opening thereby protecting the mitochondria and the myocytes from lethal injury.

Path Finder



Emerging Evidences for Managing Antiplatelet Therapy in ACS

According to Prof. Lars Wallentin, MD, PhD from Uppsala Clinical Research Centre, Uppsala University, Sweden informed that current management of ACS includes risk stratification (including age, diabetes mellitus and previous MI, stroke or peripheral arterial disease) by clinical findings and the use of ECG and biochemical markers (ST-deviation, troponin, NT-proBNP, GDF-15 and creatinine clearance). All patients with ACS receive immediate antithrombotic treatment with dual platelet inhibition (aspirin and a P2Y12 inhibitor) plus intravenous or subcutaneous anticoagulation. Patients at intermediate to high risk are rapidly sent for early coronary procedures while lower risk patients derive no benefit from early intervention. At discharge patients will receive long-term secondary prevention with a combination of aspirin, beta-blockers, statins, ACE inhibitors, and P2Y12 inhibitors (ticagrelor, clopidogrel) for at least a year. Over the last years the addition of anticoagulation with factor-Xa inhibitors like rivaroxaban have shown to lower the risk of CV-death, myocardial infarction and stroke by 16% although at a substantial 3 – 5 times increase in major bleeding. Therefore it seems unlikely that this triple combination will be brought into routine care.

Managing High Cardiac Risk Pregnancies: An Insight

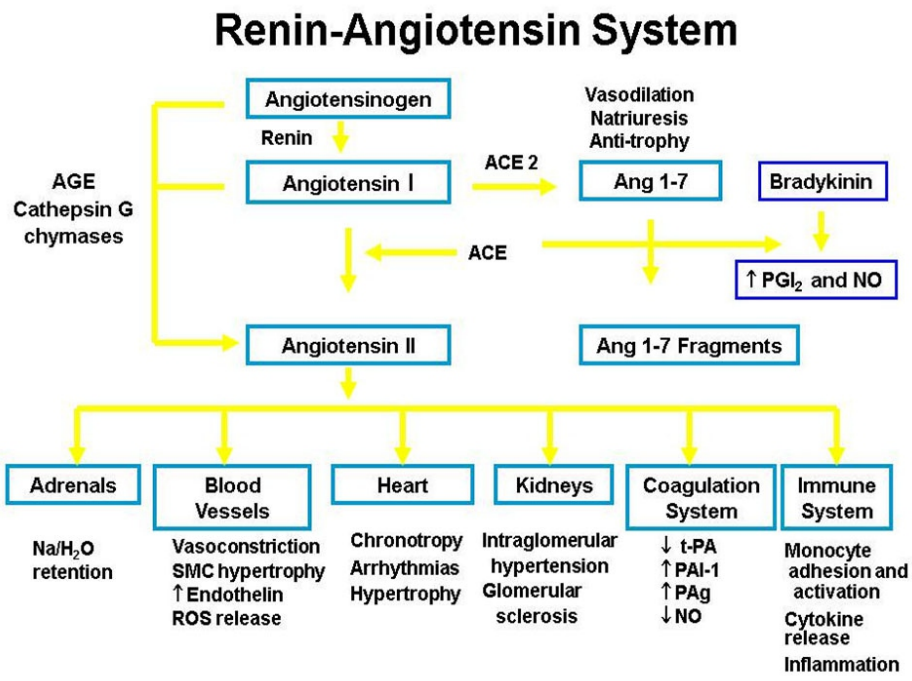
Prof. Uri Elkayam, MD, a professor of Medicine, University of Southern California in Los Angeles informed that most complications related to heart disease in pregnancy are due to the hemodynamic changes, arrhytmogenic effect and the thrombogenic effect of pregnancy as well as the side effects of drugs. The potential complications include the development of congestive heart failure, arrhythmias, thrombo- embolism and mortality. The predictors of cardiac complications during pregnancy include prior cardiac events including heart failure, TIA, stroke or arrhythmias, New York heart association class higher than II, cyanosis, left heart obstruction and systemic ventricular dysfunction.

Valvular Heart Disease, Native and Prosthetic : Anticoagulation

Selection of a prosthetic valve in young women should be dependent on the availability of an excellent system for administration and monitoring of anticoagulation, patient's preference besides other reasons for anticoagulation like atrial fibrillation, hemodynamic performance, implantability and durability. Echocardiographic evaluation should be performed in any young woman (even asymptomatic) with valvular heart disease. In cases of poor functional tolerance, medical treatment should include beta-blockers in severe mitral stenosis, vasodilators and diuretics in regurgitating valve disease. Percutaneous mitral valvotomy is indicated during pregnancy only if the patient remains symptomatic despite medical therapy. Open heart surgery should be performed only when the mother's life is threatened and if viable the fetus should be delivered beforehand.

Are Renin-Angiotensin System and Dyslipidemia Related?

According to Prof. J.L. Mehta, MD, PhD, Professor of Medicine, Physiology and Biophysics at University of Arkansas for Medical Sciences, Little Rock, AR, USA, there is a synergistic interaction between the renin-angiotensin system (RAS) and dyslipidemia. RAS activates Angiotensin II (Ang II) which stimulates type 1 receptors, resulting in oxidant stress, vasoconstriction, inflammation and platelet aggregation. Oxidized LDL cholesterol (ox-LDL) levels increase in atherosclerosis. Ang II enhances tissue uptake of ox-LDL, and together they cause extensive tissue damage. Clinically RAS inhibitors with anti-lipidemic therapy are better than either agent alone.



DO YOU RECEIVE HEALTHY HEART?

- 'Healthy Heart', a monthly newsletter by The Heart Care Clinic-CIMS Team features the latest and provides the updates in the field of cardiology/medicine/ surgery.
- The newsletter is aimed at all practicing physicians and has proven to be a useful reference guide in daily practice.

If you do not recieve the newsletter and would like to receive it regularly, please get in touch on +91 79 30101059/60 or mail on communications@cims.me

Sudoku

8	3		5			2		9
								5
5		6			7	4		
		7	6		9			1
				4				
4			2		3	9		
		8	4			1		3
1								
6		3			1		9	7

Solution on page no. 7

Surgery is Still a Gold Standard for Carotid Artery Disease !

According to Dr. Dhaval Naik, MS, DNB, Cardio Thoracic Surgeon, CIMS Hospital, Ahmedabadanti platelet therapy and aggressive treatment of vascular risk factors are the mainstays of carotid artery stenosis. Carotid endarterectomy (CEA) is effective in preventing ipsilateral ischemic events in patients with symptomatic moderate- and high-grade stenosis.

Dr. Uday Jadhav's Views on use of ACE, ARB and Renin Inhibitor in Diabetes

In line with clinical trial evidence Dr. Jadhav strongly supports that, in hypertensive patients, combination therapy with CCB/ACE-I or CCB/ARB is likely to be associated with better cardiovascular outcomes, including myocardial infarction and stroke, than regimens containing beta-blockers and thiazide diuretics and those CCB/ACE-I combinations are preferable to diuretic/ACE-I combinations on major cardiovascular endpoints besides being cost effective.

Adulthood CHD Diagnosis, Challenges and Management

According to Dr. Kashyap Sheth, D Ped., MD, DNB (Ped), FNB (Ped), Department of Pediatric Cardiology, CIMS Hospital, increasing number of CHD patients are now surviving to adulthood. Over the past few decades, there has been major progress in the understanding and management of CHD. Although early interventions have transformed the outcome for these patients, many of them have ongoing problems that require tertiary cardiac care in adult life. Furthermore, most adults with CHD require additional non-tertiary care for issues such as pregnancy, non-cardiac surgery, endocarditis and other problems.

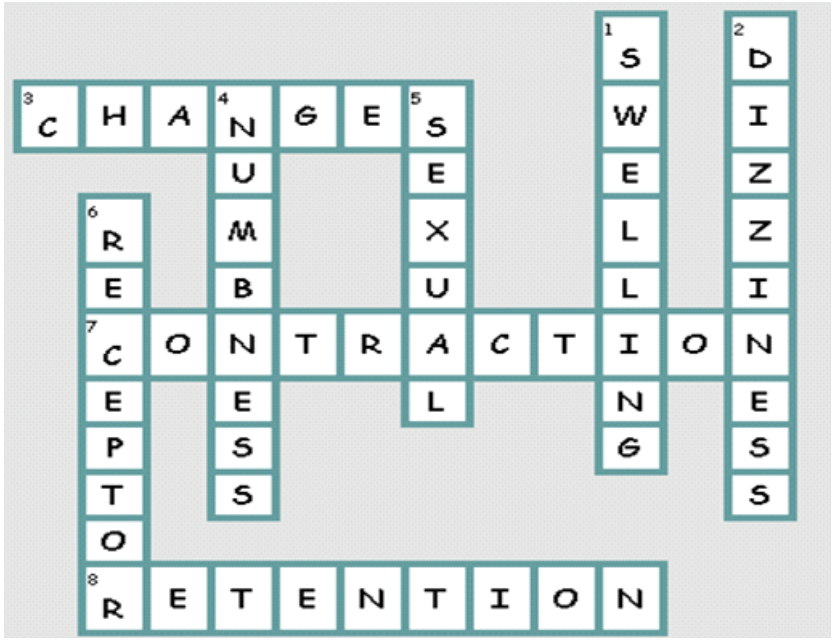
Entering an Era of Robotics

Robotics may lead to improved precision, ergonomics, and safety in the catheterization laboratory.

Prof. Rafel Beyar, MD, Dsc, Director, Rambam Health Care Campus, Israel, nominated by John Hopkins Society of Scholars for his worldwide contribution to cardiovascular science and establishing the Technion-John Hopkins Collaborations Program on Biomedical Sciences and Engineering.

According to him role of self-expanding stents will be tested against the balloon expandable technology which is the only clinical solution for coronary applications today. Technological, biomedical, and molecular science provide interventional cardiologists with one of the most robust method for revascularization, a tool that will remain for decades to come. Advances in material sciences will enable manufacture of stents with much thinner struts, a lower insertion profile, higher vessel conformability, and the ability to deal with ostial and bifurcation locations. Today, a few new devices are under evaluation for robotic manipulation of catheters for electrophysiological procedures or for cardiac catheterization. Such devices will allow for semiautomatic maneuvers, quality assurance, and computer guidance under a precise imaging system.

Answer of cross word



Answer of Sudoku

8	3	1	5	6	4	2	7	9
9	7	4	3	8	2	6	1	5
5	2	6	9	1	7	4	3	8
2	8	7	6	5	9	3	4	1
3	6	9	1	4	8	7	5	2
4	1	5	2	7	3	9	8	6
7	5	8	4	9	6	1	2	3
1	9	2	7	3	5	8	6	4
6	4	3	8	2	1	5	9	7

Challenges and Management of CAD in Special Populations

The CIMS Interventional cardiologist team will discuss these challenges

According to **Dr. Urmil Shah**, CAD is

responsible for significant morbidity and mortality in elderly patients, translating into a substantial financial burden on the health care system. In recent decades, novel approaches to prevention and treatment have resulted in increased survival of patients with CAD. The limited representation of elderly patients has resulted in fewer data about the effectiveness of various strategies in this population. Moreover, the atypical clinical presentations of CAD in elderly patients, and the consequent difficulty in diagnosis, have resulted in suboptimal implementation of secondary preventive measures by health care professionals.

According to **Dr. Joyal Shah**, CAD is like a tsunami in the young. In young patients with a single culprit lesion, and among most women (especially

those with dissection or coronary spasm), a plaque rupture on a previously nonsignificant vulnerable plaque is usually the mechanism of acute presentation. Such cases are likely related to acute physical and/or emotional stress, resulting in enhanced coronary shear forces. If these patients do not alter their lifestyles, CAD progression at an earlier age than usual will result, which may be avoided by following established preventive measures. This group has a substantial vasospastic component superimposed on a genetic predisposition to vulnerable plaque. Conversely few subsets are composed of those with diabetes and others who present with established multivessel disease (including those related to lipid abnormalities). These patients are most likely to have rapid progression of a more typical form of CAD. They will have only short-term benefit from revascularization, unless very aggressive control over risk factors is strictly adhered to. It is prudent to categorize the pathophysiology of disease in this population for better understanding of CAD.

According to **Dr. Anish Chandarana**, pathology, pathophysiology and disease presentation in women are different than

those in men. This leads to difficulties concerning diagnosis, treatment and outcome of female population. Overall women have lower rates of anatomical coronary artery disease (CAD) but more symptoms, ischemia and adverse outcomes. Women have much higher prevalence of endothelial dysfunction and heart failure symptoms with preserved systolic function. Novel risk factors like inflammatory markers and reproductive hormones as well as noninvasive imaging and functional capacity measurements can help risk stratification in women, in addition to existing methods. Risk for women with obstructive CAD is increased compared with men, still women are less likely to receive guideline-indicated therapies. While for women with evidence of ischemia but no obstructive CAD, antianginal/ antiischemic therapies can improve symptoms, endothelial function and quality of life trials evaluating impact on adverse outcomes are needed. Future investigations and research should identify tailored diagnostic and therapeutic strategies to optimize outcomes for women.

According to **Dr. Satya Gupta**, Coronary Artery Calcium Score (CACS) is a non-invasive measurement using CT scanning of the calcium in the coronary arteries.

CACS can be of two types: Electron Beam CT scan (EBCT) and Multidetector CT scan (MDCT). At present there are no guidelines available however its usefulness is beneficial to asymptomatic middle aged men and women; those with risk factors and premature coronary artery disease.

Dr. **Hemang Baxi**, discusses another non-

invasive tool-Carotid intima media thickness (CIMT) test which visualizes carotid intima and is the only test which gives objective evidence of atherosclerosis. It is mainly indicated for intermediate risk group of patients so as to identify high risk patients, so as to reduce CV events using aggressive preventive treatment strategies.

Save the Lower Extremities- Update in Newer Modalities of Treatment

Dr. Ashit Jain, MD, a renowned experienced Interventional Cardiologist opines that prevalence of peripheral vascular disease (PVD) is on an increase with increase in life span. Newer techniques to treat PVD, depending upon the organ involved have developed. He further added that management of patients with stroke has revolutionized over the past five years. The Innovations have occurred in three areas: formation of stroke centers, better imaging techniques, better tools to revascularize cerebral circulation.

CIMS Care Institute of Medical Sciences
At CIMS... We Care
CIMS Hospital, Nr. Shukan Mall, Off Science City Road, Sola, Ahmedabad-380060.Ph. : +91-79-2771 2771-75 (5 lines)
Mobile : +91-98250 66664, 98250 66668 Fax: +91-79-2771 2770 Email : info@cims.me www.cims.me