Collector's Issue

Cardiology Update

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The Heart Care Clinic
Care Cardiovascular Consultants

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Expert Opinion :

Diet in Cardiovascular Health And Disease

Expert : Anish Chandarana, MD, DM
Interviewer : Jayesh Bhanushali, MD

Dr. Jayesh Bhanushali: I'm with Dr. Anish Chandarana, renowned cardiologist of Ahmedabad, Gujarat.
Do we Indians eat healthy diet? What are the faults with our diet habits?

Dr. Anish Chandarana: With our food habits, faults are at multiple levels. Content; relative proportion of fat, protein and carbohydrate in reference to calorie consumption; type/quality of fat (SAFA, MUFA, PUFA); type /quality of carbohydrate (simple-high glycemic index or complex-low glycemic index); intake of micronutrients - minerals/vitamins/ antioxidants; intake of fibers; food preparation methods (deep frying, reusing oil, extra spicy); food storage methods; how many times in a day we eat; timings of eating, etc. are the facets where many of us are making serious mistakes.

Dr. Jayesh Bhanushali: Then what is ideal healthy diet in principle?

Dr. Anish Chandarana: Healthy diet, particularly from cardiovascular point of view, should possess following characteristics:

Message from Editor

Dear friends,

Though it has been well said 'You are what you eat', the role of proper diet in cardiovascular health has been heavily debated over last century. But by now connection between diet and cardiovascular disease has been well established through numerous trials. Mostly selection of food by people is influenced by their taste and availability; affordability; time and skills for food preparation and cultural, ethnic and religious preferences and not by health concerns. Though almost every patient and healthy relatives very curiously ask and seek for diet advice from their Doctor, usually they get a mechanical and neglected answer in most cases. So it is must for physicians to learn basics of

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Table-1

Content	Amount
Calorie	As per requirement
Calorie Pools-Energy Dense Foods	Low
SAFA/TRAFA	Low
MUFA/PUFA	High
Glycemic Index and Glycemic Load	Low
Sweets and refined carbohydrates	Low
Unrefined whole grains	High
Fried, crispy food	Low
High fat dairy products	Low
Processed foods	Low
High fat meat	Low
Nuts	Moderate
Soy products	High
Fruits, vegetables	High
Fiber	High

Dr. Jayesh Bhanushali: In which proportion Carbohydrate, Protein and Fat should be consumed to have healthy life?

Dr. Anish Chandarana: Dr. Jayesh, to have healthy life, following seems to be the ideal proportion :

Table-2

Content	% of Calorie Intake
Carbohydrate	<50% (still less for Indians with Diabetes or Metabolic Syndrome)
Protein	Upto 25% (mostly from plant source or lean meat)
Total fat intake	25-35%
Saturated Fatty Acids	<7%
Mono and Poly Unsaturated Fatty Acids	Upto 20-30%
Trans Fat	<1-2%
Cholesterol	<200 mg

In addition to this, salt should be restricted to less than 5 gm/day. Plenty of fruits (more than 500 gm/day) and vegetables (more than 500 gm/day) in multiple servings should be consumed. Fruit juices, drinks and soft drinks containing calories should be avoided similarly as prolonged cooking and deep frying of vegetables.

Dr. Jayesh Bhanushali: Is carbohydrate from any source good? Is high carbohydrate diet unhealthy?

Dr. Anish Chandarana: Traditionally we have known two forms simple (which tastes sweet) and complex (which does not taste sweet). Now carbohydrates are classified by Glycemic Index. A high glycemic index indicates a lower quality of carbohydrate giving low satiety and low HDL levels. Glycemic Load is the product of glycemic value of the food and its carbohydrate content (per serving) divided by 100. A food product may have high glycemic index but in a given quantity it may have low glycemic load. Glycemic load can be reduced by reducing the amount of carbohydrate intake and/or by eating foods with a low glycemic index.

High glycemic load increases triglyceride level, reduces HDL cholesterol, increases PAI-I levels and thus increases CAD and diabetes risk. Table-3 shows Glycemic Index and Glycemic Load of some common food.

Table-3

Food item	Glycemic Index	Serving	Glycemic Load
Carrot	47	100 gm	04
Beet root	64	100 gm	07
Potato	85	150 gm	26
Pineapple	59	150 gm	10
Banana	53	150 gm	11
Kidney beans (Rajmah)	13	150 gm	03
Soy beans	15	150 gm	01
Sweet corn	59	100 gm	14
Green Peas	39	100 gm	04
Roti-Chapati	76	60 gms	23
Poori	70	150 gm	28
White Bread	70	2 slices	21
Upma	18	150 gm	28
Idli	77	250 gm	40
Laddu	27	80 gm	16

Dr. Jayesh Bhanushali: Is it right that some fats are good and some fats are bad?

Dr. Anish Chandarana: Definitely yes, all fats are not bad provided fatty acid contents are looked at well. Quality of fat consumed is much more important than quantity of fat consumed.

1. Saturated Fat (SAFA) increases LDL cholesterol. Sources: Butter, ghee, vegetable ghee, bakery products, cheese, ice-cream, full fat milk, tropical oils like coconut, palm kernel, and palm oils, and also beef, lamb, pork, bacon, poultry with skin etc.
2. Mono and Poly Unsaturated Fat (MUFA, PUFA) increases HDL cholesterol and reduces LDL cholesterol. Sources: Olive oil, canola oil, mustard oil, peanut oil, macadamia nuts, hazel nuts, peanuts, almonds, pistachio nuts, walnuts, skinless poultry, fatty fish.
3. Cholesterol increases serum cholesterol. Sources: Egg yolk, beef, lamb, pork, poultry with skin, shrimp prawn, full fat milk, high fat dairy products.
4. Trans Fat (TRAFA) increases LDL cholesterol, Lp(a) and decreases HDL cholesterol. Sources: Deep frying, repeatedly used oil, hard margarine, vegetable ghee, bakery products including white bread, biscuits, cakes, French fries, pizzas, etc.

So one should select fats more from MUFA and PUFA source rather than SAFA and TRAFA source.

Dr. Jayesh Bhanushali: Does this mean nuts are good for health?

Dr. Anish Chandarana: Right, they are nutritious and cardio-protective, when consumed in small amount on daily basis. Nuts are rich source of good fat, protein, antioxidants, fibers, vitamins and minerals. They reduce LDL cholesterol and are almost as effective as exercise to increase HDL cholesterol. 40-60 gm/day consumption reduces risk of CAD and Diabetes. But one should remember that they are high calorie food and so should be a part of daily diet in place of other unhealthy high calorie food like dairy products, refined grains or high-fat meat.

Table-4

Nuts	Calories / 100 gm	MUFA	PUFA	SAFA
Macadamia nuts	718	59	1	12
Hazelnuts	645	47	8	5
Almonds	594	34	13	4
Cashew nuts	574	27	8	9
Pistachio nuts	570	24	14	6
Walnuts	606	13	37	4

Dr. Jayesh Bhanushali: Dr. Anish, what is the relationship between dietary fat and serum cholesterol levels?

Dr. Anish Chandarana: Three dietary factors decide serum cholesterol levels:

1. Total energy intake which if higher than required leads to Obesity and lowers HDL cholesterol
2. Proportion of energy intake from fat which raises HDL cholesterol and total cholesterol
3. Proportion of energy intake from saturated fat which raises total cholesterol

A higher fat intake (greater than 35% of total energy need) is associated with obesity and a lower fat intake (less than 20% of total energy need) risks adequate intake of essential fatty acids and fat soluble vitamins. Dietary cholesterol intake has a

Table-5

Oil	SAFA	MUFA	PUFA
Safflower (Linoleic >70%)	06	14	75
Canola	07	59	30
Almond	08	70	17
Walnut	09	23	63
Sunflower (Linoleic>60%)	10	20	66
Sunflower (Linoleic<60%)	10	45	40
Mustard	12	59	21
Corn	13	24	59
Olive	14	74	8
Sesame	14	40	42
Soyabean	14	23	58
Peanut	17	46	32
Rice bran	20	39	35
Cod Liver	23	47	23
Cottonseed	26	18	52
Palm	49	37	9
Cocoa butter	60	33	3
Ghee	62	21	13
Palm kernel	82	11	2
Coconut	92	6	2

very small impact on serum lipid profile. Reducing dietary cholesterol intake by 100 mg/day reduces serum cholesterol level by 1% only.

Dr. Jayesh Bhanushali: Which oil or ghee should be used for cooking?

Dr. Anish Chandarana: Oil which is less in SAFA content and has high MUFA and PUFA content should preferably be used. Safe upper limit suggested is less than 20 gm/day for oil and less than 5 gm/day for ghee. We should remember that deep frying and reusing oil leads to generation of TRAFA (Trans Fatty Acids) which is more dangerous than SAFA for atherogenicity, thrombogenicity and endothelial dysfunction, this should be avoided. Chart showing fatty acid content in each oil can help to select one for use.

Dr. Jayesh Bhanushali: Dr. Anish, what is the diet way to reduce dangerous LDL Cholesterol?

Dr. Anish Chandarana: By taking adequate care about quantity and quality of food (as in table 6), we can reduce LDL cholesterol by upto 40% in most. Not only this equals to LDL lowering effect of statin, but also we can achieve equivalent pleiotrophic effects i.e. improvement in endothelial function, antithrombotic, antiatherosclerotic and antiarrhythmic effects.

Table-6

Interventions	Quantity	Reduction in LDL (%)
SAFA intake	<7%	10
Cholesterol intake	<200 mg/day	5
Soy protein	25 gm/day	5
Nuts	50 gm/day	5
Viscous fiber intake	5-10 gm/day	5
Plant sterols / stanols	1-3 gm/day	5
Weight loss	5 kg	5
Total		**40**

Dr. Jayesh Bhanushali: What about fish and meat? Are they very unhealthy?

Dr. Anish Chandarana: Modest consumption of fatty fish i.e. 60 gms/day [species with higher Omega-3 Fatty acids - EPA (Eicosapentaenoic Acid) and DHA (Docosahexaenoic acid)] reduces risk of CAD, MI, death due to CAD and total mortality. Beneficial effects are rendered to all people with or without known CAD. AHA has recommended that all adults eat fatty fish (Herring, Salmon, Sardines, Mackerel, etc.) without frying at least twice a week. For those who do not eat fish, recommended daily supplementary dose of DHA+EPA is 1 gm for secondary prevention and 250 mg for primary prevention.

Some of the beneficial effects of Omega 3 fatty acids:

1. Decreases platelet reactivity, aggregability and thrombosis
2. Improves endothelial function
3. Significantly reduces triglyceride
4. Decreases homocysteine level
5. Improves insulin sensitivity
6. Reduces risk of ventricular fibrillation and sudden cardiac death

Although meat as a whole contains high amount of saturated fat, lean meat has much less of it and has upto 40% monounsaturated fat. Not only that, lean meat is a good source of protein like chicken. An adult should consume lean meat or skinless poultry, no more than 150 gm/day.

Dr. Jayesh Bhanushali: Is there a relationship between diet and hypertension?

Dr. Anish Chandarana: Obesity and overweight increase blood pressure in all ethnic group at any age. Overweight people has two to six times higher risk of developing high blood pressure. Thus weight loss is an important key to control hypertension in some people. Some people are "salt sensitive". Even population studies have shown association between high salt intake and increased risk of hypertension and stroke. Eating a diet low in total fat, SAFA and cholesterol and rich in fruits and vegetable with a salt intake of less than 5 gm/day effectively lowers blood pressure.

Dr. Jayesh Bhanushali: What is the ideal way to lose weight?

Dr. Anish Chandarana: Various weight loss methods have been studied extensively. Almost any system of calorie restriction and/or increased consumption through exercise will result in weight loss. Extreme dietary modifications involving carbohydrates, protein and fats are impossible to maintain on a long term basis and many times

injurious to health. Similarly rapid weight loss by a diet regimen is unacceptable and dangerous. Rather slow but steady weight loss is much more likely to result in permanent changes that will help in maintenance. A healthy weight loss is 0.5-1 kg/week and this requires a caloric deficit of 3500-7000 calories/week. This in turn is best achieved by reducing 250-500 calories in food intake and increasing 250-500 calories through physical activity, leading to caloric deficit of 500-1000 calories/day.

Pills sold by weight loss industry are not replacement to careful calorie intake-expenditure calculation. We need to remember that a calorie is a calorie whether derived from carbohydrates, protein or fat.

Unrealistic goals for weight loss mostly come in the way of healthy changes because only five to ten percent loss of body weight can make large difference in blood pressure, blood glucose and serum triglyceride, thereby reducing cardiovascular risk. The evidence about weight maintenance, however, is not as promising. Most people who lose weight, regain the lost weight over the first two years.

Dr. Jayesh Bhanushali: Is there any diet discipline for children?

Dr. Anish Chandarana: Yes, childhood obesity predisposing to metabolic syndrome is increasing very fast in affluent families and there are evidences that lifestyle modifications starting from childhood is likely to have definite benefits later in life. So dietary discipline should be followed for children more than 2 years of age.

Dr. Jayesh Bhanushali: What kind of hot or cold beverages should be preferably used?

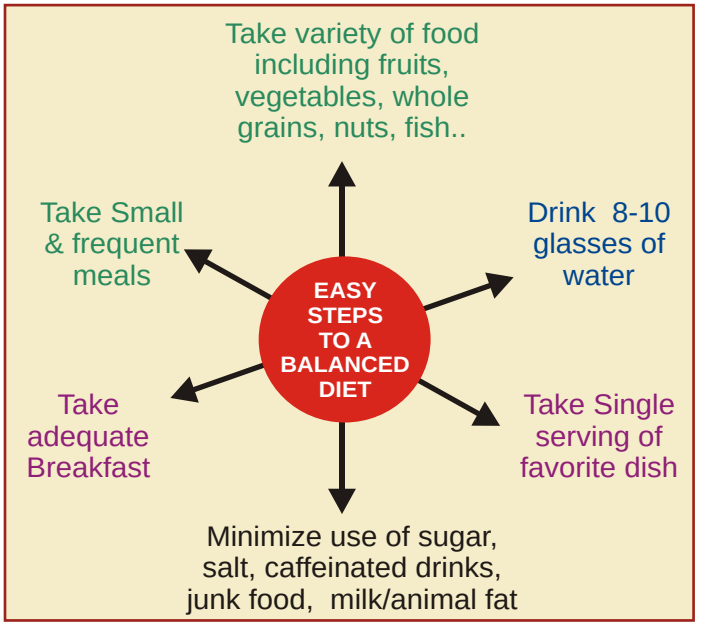
Dr. Anish Chandarana: Large quantity of unfiltered coffee can raise cholesterol and homocysteine level. So its use should be restricted to two cups per day to avoid any negative cardiovascular effects. Tea being rich in flavanoids leads to reduction in LDL cholesterol and so the cardiovascular risk. Soft drinks if at all used, should be low calorie.

Dr. Jayesh Bhanushali: What about alcohol consumption?

Dr. Anish Chandarana: Modest consumption of alcohol (<2 units for men and 1 unit for women) on daily basis has been found to have beneficial effects on lipid profile, (particularly increase in HDL), insulin sensitivity and platelet aggregation. Now "J-shaped" association has been shown between alcohol intake and various adverse health status like CAD, HT, stroke, DM, Heart Failure, sudden death and mortality. For binge drinkers harm outweights the benefits obtained by regular moderate drinkers. This is one chief factor why alcohol has not been found protective in Indians. Not only this but as alcohol consumption is associated with variety of medical, social, economical, and emotional adverse outcomes like obesity, high BP, stroke, dyslipidemia, chronic liver disease, cardiomyopathy, breast and bowel cancers, road accidents, spousal and children abuse, suicide, foetal alcohol syndrome, etc., promoting alcohol is not recommended as preventive strategy.

Dr. Jayesh Bhanushali: Than what is the cardio-protective diet-style?

Dr. Anish Chandarana: A healthy overall diet consisting of a variety of food, allowing to maintain



optimum body weight, blood pressure, blood sugar and lipid profile should be considered a cardio-protective diet-style. Strong data exists for intake of fats, cholesterol, fish, sodium, fruits and vegetables for their positive and negative cardiovascular influences.

Questionnaire of the Month

1 ***All the following are included in the revised cardiac risk index to predict patients at high risk of sustaining peri-operative cardiovascular complications except***
a. Chronic kidney disease with a pre-operative creatinine > 2.0 mg/dL
b. Current tobacco use
c. History of congestive heart failure
d. History of ischemic heart disease
e. Insulin therapy for diabetes mellitus

2 ***Which condition does not require Infective Endocarditis prophylaxis?***
a. VSD b. PDA
c. ASD d. TOF

3 ***All the following ECG findings are suggestive of LVH except***
a. (S in V1 + R in V5 or V6) >35 mm
b. R in aVL > 11 mm
c. R in aVF > 20 mm
d. (R in I + S in III) > 25 mm
e. R in aVR > 8 mm

4 ***All are associated with a high risk of stroke in patients with atrial fibrillation except***
a. Diabetes mellitus
b. Hypercholesterolemia
c. Congestive heart failure
d. Hypertension

5 ***A 58-year-old female undergoes successful stenting of LAD & LCX arteries after a NSTEMI. She should be discharged on all the medications except***
a. Aspirin b. Metoprolol
c. Clopidogrel d. Lisinopril
e. Warfarin

6 ***A 25-year-old asymptomatic male without any significant family history is seen in the clinic for a routine physical examination. A III/VI systolic murmur is heard at the apex. On Valsalva maneuver the murmur decreases in intensity, and the murmur is accentuated with sustained handgrip. His murmur probably is due to:***
a. Aortic regurgitation
b. Mitral regurgitation
c. Aortic stenosis
d. Hypertrophic cardiomyopathy
e. Pulmonic stenosis

7 ***Which of the following congenital cardiac disorders will lead to a left-to-right shunt, generally with cyanosis?***
a. Anomalous origin of the left coronary artery from the pulmonary trunk
b. Patent ductus arteriosus without pulmonary hypertension
c. Total anomalous pulmonary venous connection
d. Ventricular septal defect
e. Sinus venosus atrial septal defect

8 ***Acute hyperkalemia is associated with which ECG changes?***
a. QRS widening
b. Prolongation of the ST segment
c. A decrease in the PR interval
d. Prominent U waves
e. T-wave flattening

9 ***Which drug has been demonstrated to reduce perioperative mortality in patients undergoing non-cardiac surgery?***
a. Nitrates
b. Beta blocker
c. Calcium channel blocker
d. Alpha 2 Agonist
e. Diuretic therapy

10 ***Which of the following parameters adds predictive information regarding cardiovascular risk stratification and the measurement of serum cholesterol?***
a. Anti Chlamydia pneumoniae antibodies
b. C-reactive protein
c. Homocysteine
d. Lipoprotein A
e. Plasminogen activator inhibitor 1

Everybody who answers All 10 questions, and mails the answers in, will still get a Certificate of CME (1 Hour) from the 3 C CON

Message from Editor

Continue of Page-1

healthy diet, particularly in our country where expert dietitians are not available at many places. Through this compilation, an attempt is made to deliver few basic concepts about role of diet in cardiovascular health and disease.

Dr. Anish Chandarana

Accomplishment of Dr. Jayesh Bhanushali

Dr. Jayesh Bhanushali, completed his MD Medicine from Pramukh Swami Medical college, Karamsad, Gujarat in September 2006. At present he is in his final year of DNB Cardiology Program at SAL Hospital under Dr. Milan Chag and Dr. Keyur Parikh. During his cardiology tenure he has gained experience in various fields of interventional and non-interventional cardiology.

Feed Back Form

Please send your feedback and answers to the Quiz for this issue and drop it in the post box:

Name: _____ Degree _____

Name of clinic/hospital: _____

Address: _____

City: _____ State: _____ Pin code: _____

Contact No.: _____ Email ID: _____

- Did you like this issue? Yes ☐ No ☐
- Did you like the Topic of the issue? Yes ☐ No ☐
- Do you think this issue updated your academic knowledge? Yes ☐ No ☐

Answer Sheet of the Quiz of Cardiology Update Volume 1 Issue-4 (September-October 2008)

Question No.	A	B	C	D	E
Question-1	○	○	○	○	○
Question-2	○	○	○	○	○
Question-3	○	○	○	○	○
Question-4	○	○	○	○	○
Question-5	○	○	○	○	○
Question-6	○	○	○	○	○
Question-7	○	○	○	○	○
Question-8	○	○	○	○	○
Question-9	○	○	○	○	○
Question-10	○	○	○	○	○

- Put a cross ⊗ inside the correct answer
- Only one best answer for each question
- Three top answerers will get prizes with their name, address and photo published in next issue
- Everybody who answers all the 10 questions and mails the answers will still get a Certificate of CME of One Hour (1 Hour) from 3 C CON
- Please send your answers by post to our office address before 15 September, 2008

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3-C Con 2009 International Faculty

Choksi, Nishit, MD

Dr. Choksi practices cardiology, internal medicine, and interventional cardiology in Berkley. He took his Post Graduate Training from world famous Wm Beaumont Hospital, for Cardiovascular Diseases and Internal Medicine. He is a very good speaker. His Hospital Affiliations are with Southeast Michigan Surgical Hospital and also with Providence Hospital, North Oakland Medical Center, Oakwood Hospital and Medical Center and St. Mary Mercy Hospital of Michigan. He is pioneer in USA in Peripheral Vascular Disease.

Elkayam, Uri, MD

Director of the Heart Failure Program, Professor of Medicine and Professor of Obstetrics and Gynecology at the University of Southern California in Los Angeles. Dr. Elkayam is a past member of the editorial board of the Journal of the American College of Cardiology and is presently a member of many national and international committee's and advisory boards. Dr. Elkayam has been the recipient of a number of awards. Dr. Elkayam has the distinction of being listed in Best Doctors in America (2000-2008) and America's Top Doctors (2001-2008).

Gershlick , Anthony, H. B. Sc., MBBS, FRCP

University Hospitals of Leicester, Leicester,UK Tony Gershlick is Consultant Cardiologist and Honora ry Senior Lecturer at the University Hospitals of Leicester. Dr Gershlick maintains a significant research interest, publishing extensively in the area of vessel wall/blood interactions, especially those that occur following percutaneous coronary intervention. He is an interventional cardiologist undertaking more than 350 procedures per year. He has an international reputation evidenced by requests to sit as faculty member on up to five international meetings per year. He is a council member of the British Cardiac Society (BCS), Chairman of a BCS working group and is Chairman of the Local Cardiovascular Programme Board.

Jain, Ashit, MD

Dr. Ashit Jain graduated from the College of Medical Sciences, University of Delhi, India in the year 1981. He practices Cardiology, Internal Medicine and Interventional Cardiology in Fremont, Hayward, Milpitas, and San Leandro, California, U.S.A. He is a very good orator. He has hospital affiliations with Washington Hospital, St. Rose Hospital etc. in U.S.A. He has done many clinical research trials and many of them are ongoing. He is pioneer in Carotid Interventional Program in the Bay area.

Krucoff, Mitchell, MD, FACC, FCCP

Director, Cardiovascular Laboratories, Duke Medical University, Durham VA Medical Center, Acting Chief, Cardiology Division, Durham VA Medical Center when Dr. Morris in absentia, Director, eECG Core Laboratory, Duke Clinical Research Institute, Director, Interventional Devices Clinical Trials, DCRI, Director, The Heart Knows No Borders Project, Director, The MANTRA Study Project. He is an excellent teacher. He has been to India many times & is a key opinion leader in various cardiovascular diseases.

Leeuwen, Frank, MD

Frank van Leeuwen, M.D. got interested in cardiovascular clinical studies during his study medicine at the University of Leyden, the Netherlands. After his graduation, he worked as a resident cardiology after which he decided to continue in clinical research and he joined a pharmaceutical company. Since 1992, Frank has been working at the Bakken Research Center, Medtronic's European research facility located in Maastricht, the Netherlands. Frank has been involved in numerous coronary stent studies as well as studies with endovascular stent grafts. Most recently, the Protect study, a global project that will randomize 8800 patients comparing two drug eluting stents focusing specifically on safety.

Lotan, Chaim, MD, FACC, FESC

Professor Chaim Lotan was born in Hadera, Israel in 1952.

Prof. Lotan is also the chairman of the Committee for Certification & Licensing of Coronary Stents in the Israel Ministry of health. He has participated in various research projects and initiated and directed many study protocols, and continues to do so. In 2004-2006 he served as Chair of the National Cardiology Boards Examination Committee.Prof. Lotan was appointed Head of the Heart Institute in Hadassah University Hospital in Ein Kerem, Jerusalem in September 2000.

Mehta, Sameer, MD, FACC, MBA

Interventional Cardiologist, Mercy Medical Centre, Cedars Medical Centre and Mt. Sinai Medical Centre, Miami. Graduated in Medicine from Delhi University with honours. Rotary Scholar: Rotary International Award 1982. Best all Around Graduate Delhi University. PG Residency in Safdarjung Hospital, New Delhi, New York Infirmary-Beekman Downtown Hospital. Cardiology Fellowship in Lincoln Hospital, New York and Westchester Country Medical College, New York & South Miami Hospital, Miami. He is an extraordinary orator. Investigator in over 150 multi-center trials. Took Masters in Business Administration from University of Miami.

Poole-Wilson, Philip, BA, MB, BChir, MA, MD, FRCP, FACC, FESC

Philip A Poole-Wilson is the British Heart Foundation Simon Marks Professor of Cardiology. He is Head of Cardiac Medicine at the National Heart & Lung Institute (NHLI), Imperial College London and Honorary Consultant Physician at the Royal Brompton & Harefield Hospitals, London, UK. He was a British American Travelling Research Fellow at the University of California in Los Angeles (CLA) from 1973 to 1974. He was Head of the Division (National Heart and lung Institute (NHLI) in the Faculty of Medicine of Imperial College London from 1997 to 2000. He was awarded Le Prix Europe et Medecine 2001 de L'Institute des Sciences de la Sante, Paris. As of May 2007 he had 491 citations in PubMed. His specialist interests are heart failure, coronary heart disease and the global prevention of heart disease and stroke.

Shah, Bimal, MD, M.B.A.

Dr. Shah graduated from Stanford University Hospital And Clinics and doing his fellowship in cardiology from Duke University Medical Center; Durham, North Carolina. He is present working with Duke University, Duke Institute for Clinical Research, Investigating issues and trends in the quality of care and outcomes in patients with cardiovascular disease using a variety of clinical databases and registries. Working with industry on clinical trial development and management, quality improvement, registry development, strategic planning, and database management. Developing projects on cost-effective analysis for medical therapeutics, health policy, and cost structures of health systems. He has published various publication and abstract in various journals. He is awarded by Stanford University Excellence in Research by Housestaff Award, 2005, Duke University School of Medicine Dean's Recognition Award, 2002, Cigna Excellence Award, 2001, etc. He is a very good orator.

Topaz, On, MD, FACC, FACP, FCCP

Professor On Topaz attended the Pre-Academic Center for Natural Sciences at the Hebrew University of Jerusalem. He is a member of the editorial board of ten peer-reviewed medical journals. Published more than 100 papers in peer-reviewed journals, as well as 50 abstracts and ten book chapters. He has also made multiple presentations and invited lectures around the world on various topics. He serves as faculty, chairperson and presenter on the major interventional cardiology meetings. Professor Topaz won several grant awards including a National Institutes of Health National Research Service Award grant. Professor Topaz is an active clinician.

Vanderheyden, Marc, MD, FESC

Dr. Marc is Co-director at Onze Lieve Vrouwziekenhuis, Cardiovascular Center Moorselbaan 164 - 9300 Aalst, Belgium. He did his post-graduate training in Cardiology from interventional cardiology OLV ZH, Aalst. He is a very good speaker. He was nominated for "The Young Investigator Award of the Belgian Society of Cardiology" Functional Significance of iNOS Gene Expression upon Left Ventricular Function in the Human Heart. He has published various publications in national and international journals. He is member of Belgian Society of Cardiology, Belgian Working Group of Cardiac Pacing and Echocardiography, European Working Group on Cardiac Rehabilitation, European Working Group on Myocardial Function, European Working Group on Heart Failure.

Wijns, William, MD, FESC

Co-Director, Cardiovascular Centre, O.L.V.Z. Aalst, Moorselbaan 164 9300 Aalst, Belgium. Distinguished Cardiologist Scientist. Vice-President, External Relations, ESC, Board Member of the World Heart Federation, Representing the European Society of Cardiology. He is an outstanding orator. Has over 150 publications in peer reviewed journals. He is on the Editorial Board Member for European Heart Journal, Dialogues in Cardiovascular Medicine, International Journal of Cardiac Imaging, International Journal of Cardiac Interventions, Italian Heart Journal. Member of Scientific Societies like Belgian Society of Cardiology, American Heart Association (Fellow Circulation Council), Belgian Working Group on Interventional Cardiology (Board), French Society of Cardiology (Membre Etranger), Euro PCR (member of Board Directors) Member of Legal Authorities like National Peer Review Council for Cardiology (Moniteur Belge since March 2000).

3-C Con 2009

Annual Conference on Cardiovascular Medicine

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January 9 - 11, 2009 (Friday, Saturday and Sunday)

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Tagore Hall, Ahmedabad
The Grand Bhagwati, Ahmedabad

700 delegates already registered !

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Question and Answer of Previous Issues

Vol-1 Issue-1 (March-April 2008)
Opening Chronic Total Occlusions

Case Presentation of Ischemic Heart Disease

Chief Complaint: Abnormal resting electrocardiogram (ECG) in a diabetic patient

History of Present Illness: A 52-year-old male patient with diet-controlled diabetes was referred for exercise myocardial perfusion imaging by his internist due to an abnormal resting ECG. He does not take any medication and is entirely asymptomatic, without evidence of chest pain or dyspnea.

History

Past Medical History: Diet-controlled diabetes, hypertension, and hyperlipidemia

Family History: No premature coronary artery disease (CAD),

Social/Occupational History: Nonsmoker

Physical Findings

Age: 52, **Gender:** Male, **Blood Pressure:** 179/80 mm Hg **Pulse:** 75 bpm

General Appearance: Well developed, well nourished

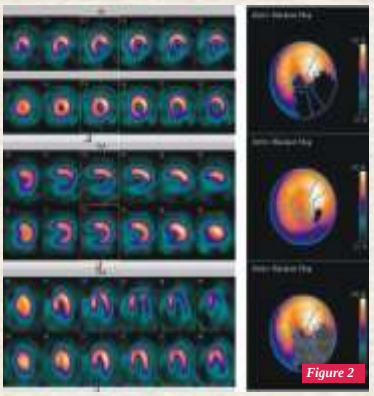
Head and Neck: No jugular venous distention

Chest and Lungs: Clear to auscultation

Cardiac Exam: Regular rhythm, normal S1 and S2, no murmur,

Abdomen: Noncontributory, **Extremities:** Normal

Neurologic: Noncontributory



1. ***The patient exercised 6 minutes, 30 seconds on the Bruce protocol, reaching 95% of his maximal predicted heart rate without chest pain. The peak blood pressure was 195/97 mm Hg. The resting and peak stress ECGs are shown in Figure 1a and Figure 1b. Gated myocardial SPECT is shown in Figure 2. The resting and post-stress left ventricular ejection fraction were 69%. The stress test showed which of the following?***
   A. A normal study B. A medium sized inferior defect
   C. Apical thinning artifact D. Transient cavity dilation
   E. B and D
2. ***Which of the following is the appropriate step at this point?***
   A. Perform exercise echocardiogram
   B. Perform MRI Imaging C. Coronary angiography
   D. CT Angiography **E. C or D**
3. ***Although the patient had a medium ischemic perfusion defect, due to the presence of significant ST-segment depression on the stress ECG and transient ischemic dilatation on the perfusion study, further testing was recommended. Multislice computed tomography of the coronary arteries (CTA) with calcium scoring was subsequently performed. The CTA showed which of the following?***
   A. A normal study
   B. Significant coronary atherosclerosis without significant luminal stenosis
   C. Nonsignificant coronary atherosclerosis with significant luminal stenosis
   D. Significant coronary atherosclerosis with significant luminal stenosis
4. ***Which of the following is the most appropriate step in this asymptomatic patient?***
   A. Do nothing since the patient is asymptomatic
   B. Do a follow-up CT Angiogram in 6 months
   C. Perform a percutaneous coronary intervention
   D. Perform coronary artery bypass graft surgery (CABG)
5. ***Which one of the following statements is not true concerning mitral stenosis?***
   A. The opening of the valve is dependent on the valve cusps being free and mobile
   B. LA enlargement is always present
   C. The aperture of the valve has an oval shape
   D. Valve cusps are not infrequently calcified
   E. There are cases with a subvalvular stenosis
6. ***Risk factors for increased mortality in heart failure include all of the following, except:***
   A. Anemia (Hgb 8.0 g/dl)
   B. Sleep apnea (apnea-hypopnea index 21per hour)
   C. Chronic renal insufficiency (serum Cr 3.5 mg/dl)
   D. Elevated BNP level (145 pg/ml)
   E. Sustained VT (>30 seconds without syncope)
7. ***Indications for anticoagulation with warfarin in heart failure patients include:***
   A. AF with controlled ventricular response
   B. LV thrombus detected by echocardiography
   C. Protein C or S deficiency
   D. Previous cardioembolic stroke
   E. All of the above
8. ***All but one of the following are risk factors for progression of calcific tricuspid aortic valve stenosis:***
   A. Age B. Plasma LDL
   C. Uneven cusp size D. Hypertension
   E. Male sex
9. ***Which trial showed benefit of lowering of Lipid Levels in IHD patients?***
   A. Asteroid **B. Prove IT-TIMI**
   C. ARTS D. HOPE
10. ***What is the level of TG in mg/dl, which is associated with lower risk of recurrent CHD events after ACS:***
   A. 200-250 mg/dl B. 180-200 mg/dl
   C. 160-180 mg/dl **D. < 150 mg/dl**

Vol-1 Issue-2 (May-June 2008)
Reperfusion Strategies in STEMI: Focus on current Guidelines and Late-breaking TRANSFER-AMI trial (ACC-2008)

1. **Which of the following most likely explains the slow coronary flow?**
   A. Coronary embolization B. Dilated coronaropathy
   C. Myocarditis
   D. Endothelial dysfunction
   E. Coronary steal syndrome
2. **Which of the following therapies would be beneficial to the patient?**
   A. Aspirin B. Statin therapy
   C. Angiotensin-converting enzyme inhibitors
   D. All of the above E. None of the above
3. **Which of the following anti anginal drug acts by altering energy substrate metabolism of the cardiac myocyte?**
   A. Nicorandil **B. Ranolazine**
   C. Iso sorbide mononitrate D. Diltiazem
4. **Which is the most cardioselective B blocker amongst the following?**
   A. Nebivolol B. Bisoprolol
   C. Metoprolol D. Atenolol
5. **Which of the following parameter does NOT help in assessing the severity of mitral stenosis?**
   A. Intensity of S1. B. EF slope on Echo
   C. Planimetered valve area on Echo
   D. Intensity of diastolic murmur
6. **Which of the following congentital defects is not amenable to percutaneous intervention?**
   A. ASD B. VSD
   C. PDA D. Valvular Pulmonic Stenosis
   E. Mitral Stenosis
7. **Which of the following is the most sensitive diagnostic modality for evaluation of viable myocardium?**
   A. Dobutamine stress Echo B. Stress thallium
   C. PET scan D. Cardiac MRI
8. **In a hemodynamically unstable acute pulmonary embolism, within what period of time after the initial event could the initiation of streptokinase infusion considered?**
   A. Upto 24 hours B. Upto 1 week
   C. Upto 2 weeks D. Upto 1 month
9. **50 year old man was undergoing work up for anaemia. All his reports were normal except for a positive stool occult blood. Patient was to undergo G. I. scopy . ECG taken before that revealed large QRS voltages. Hence, patient underwent an echo examination which showed a concentric LVH with LVEF of 50%, a thickened calcified aortic valve with Peak and mean gradients across the valves of 86 and 60 mm Hg, mild AR. Normal other valves. What would be the plan of management for his asymptomatic cardiac condition?**
   A. Medical management
   B. CAG followed by AVR with a metallic valve+/- CABG
   C. CAG followed by AVR with a bioprosthetic valve +/- CABG
   D. Balloon Aortic Valvuloplasty
10. **What would be the most likely diagnosis from the following Echo parameters?**
    Mild Bi atrial enlargement,
    Mild Pulmonary Hypertension, Mild MR and TR
    Trans mitral inflow velocity respiratory variation > 25%
    A. Cardiac Tamponade
    B. Restrictive Cardiomyopathy
    C. Constrictive Pericarditis
    D. Right Ventricular Infarct

Vol-1 Issue-3 (July-August 2008)
Chest Pain Unit

1. ***Which of the following drugs are class I indications for treatment of patient with Post MI LV dysfunction?***
   A. Ramipril B. Carvedilol
   C. Eplerenone **D. Diltiazem**
2. ***Hirudin is superior to heparin as an antithrombotic agent because they have:***
   A. Antithrombin III sparing effect
   B. No direct effect on platelets or endothelial cells
   C. Inhibitory action on thrombin bound to vascular endothelium also
   D. All of above
3. ***What is the amount of DC Shock required for Atrial Flutter?***
   A. 25 J **B. 50 J**
   C. 100 D. 200 J
4. ***All are useful in patients with non ST elevation MI except:***
   A. Thrombolytics
   B. GPIIB IIIA receptor antagonist
   C. Statins
   D. Early invasive approach
5. ***All of the following are Absolute relative contraindications to thrombolytic therapy as treatment for AMI except:***
   A. Menstrual bleeding (current)
   B. Internal surgery (<10 days)
   C. Severe hypertension (systolic BP>174 mm Hg)
   D. Prolonged CPR (>15 minutes)
   E. Recent severe GI bleeding (<3 months)
6. ***Which of the following is not characteristic of cardiac tamponade?***
   A. Pulsus paradoxus
   B. Equalized diastolic filling pressures
   C. Elevated RA pressure with sharp Y descent
   D. Electrical alternans
   E. Right atrial collapse on echo
7. ***Third Heart sound may be commonly present in all except:***
   A. Dilated cardiomyopathy
   B. Hypertrophic cardiomyopathy
   C. Severe mitral regrezitation
   D. Thyrotoxicosis
   E. Large VSD with LXR flow
8. ***AF is seen in all except:***
   A. ASD **B. VSD**
   C. Constrictive Pericarditis D. MI
9. ***In Valvular AS worst outcome is indicated when occurs***
   A. Angina B. Syncope
   C. Dyspnea D. Palpitation
10. ***What are the hemodynamic correlates of S3?***
    A. LVEF < 40% B. LVEDP > 25 mm Hg
    C. Cardiac Index < 2 L/m/m2 **D. All of the above**

Top Answerers of the July-August Issue

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Next Issue

Topic
Endovascular Intervention

Month
November-December, 2008

Editor
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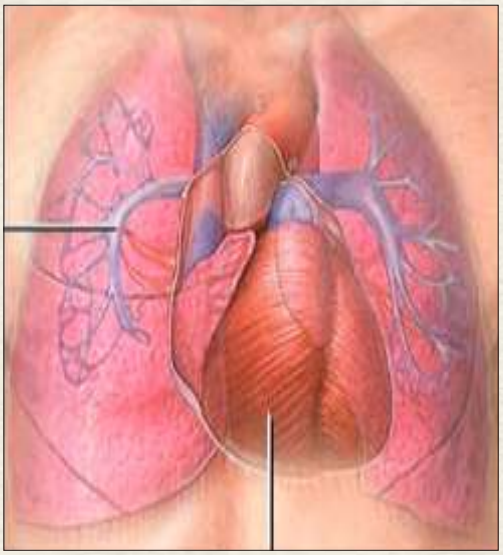
Primary Pulmonary Hypertension

We, at the Heart care clinic are starting Freedom-PAH trial using oral Treprostinil Diethanolamine Sustain Release Drug (Vasodilator) vs Oral Placebo in a Randomized Trial.

Subcutaneous Treprostinil Sodium has been USFDA approved since 2002.In our past experience using Intravenous treprostinil in an Indian trial, the symptomatic and clinical improvement obtained was satisfactory and the sponsor decided to provide medication life long to the patients.

Treprostinil sodium and diethanolamine, the Prostacyclin analogues are the newer molecules which by its vasodilatory effect have shown to have a beneficial effect in treating Primary Pulmonary Hypertension. Many more patients of this progressive fatal disease would be benefit from its use.

For further information you are welcome to contact us, If you have any patient with Primary Pulmonary Hypertension.



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