

NHI Dialogue

Quarterly Health Magazine of Cardio Diabetes Research Society

Editor in Chief : V. K. Gujral

Vol.1 No. 15 Feb.- April. '10



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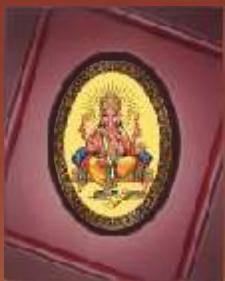
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NHI Dialogue

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*Readers are advised to first
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Quarterly Health Magazine of
Cardio Diabetes Research Society
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Editorial Voice

Dear friends !

Wish you a very happy healthy & wise new year 2010 . This first issue of the year brings you latest news and guidelines from the world of diabetes and heart diseases. Our experts have written answers to your specific questions . Please keep sending your queries, experiences and suggestions.

The Hindi section of news is added. The next issue will have some more new look columns. You can log on to www.Diabetesheartcare.com for diabetes Risk, Test, Heart Risk Score and lot of useful information on the subject .

Hoping to raise your hope ...

Your's

Vinod K. Gujral

- drgujral19@gmail.com

What is the Glycemic Index?

Dr V.K.Gujral, *CardioDiabetologist*



Not all carbohydrate foods are created equal, in fact they behave quite differently in our bodies. The glycemic index or GI describes this difference by ranking carbohydrates according to their effect on our blood glucose levels. Choosing low GI carbs - the ones that produce only small fluctuations in our blood glucose and insulin levels - is the secret to long-term health reducing your risk of heart disease and diabetes and is the key to sustainable weight loss.

- The Glycemic Index (GI) is the measure of HOW FAST different foods convert into GLUCOSE after we consume them and HOW FAST they raise our Blood Sugar, Naturally the fastest is the GLUCOSE itself hence it has a GI value of 100.
- Low GI diets help people lose and manage weight.
- Low GI diets increase the body's sensitivity to insulin.
- Low GI carbs improve diabetes management.
- Low GI carbs reduce the risk of heart disease.
- Low GI carbs improve blood cholesterol levels.
- Low GI carbs can help you manage the symptoms of PCOS.
- Low GI carbs reduce hunger and keep you fuller for longer.
- Low GI carbs prolong physical endurance.
- High GI carbs help re-fuel carbohydrate stores after exercise

Let us make reducing the overall GI of our diet, one of our New Year resolutions.

7 tips for reducing the GI of your diet for breakfast, lunch and dinner and those snacks in between.

1. Replace those high GI crunchy breakfast flakes that spike your blood glucose and insulin levels with smart carbs like natural muesli or traditional (not instant) porridge (Dalia) oats or vegetable stuffed Roti and Sprouts.
2. Swap your bread. Choose a really grainy bread where you can actually see the grains, multigrain Roti, wholemeal bread, soy and linseed bread.
3. Make your starchy staples the low (or lower) GI ones. Look for the lower GI rices like Brown Basmati, Doongara Clever Rice or Moolgiri medium grain rice, choose less processed foods such as lower GI starchy vegetables like lower GI potatoes, orange fleshed sweet potato, or pumpkin.
4. Learn to love legumes – home-cooked or canned, red kidney beans (Raajma), Channa Daal.
5. Develop the art of combining. Combine high GI carbs with low GI tricklers to achieve a moderate overall GI. More Daal with less rice, rice with beans and chilli, baked beans on Chapati.
6. Tickle those tastebuds and slow stomach emptying – try vinaigrette (using vinegar or lemon juice) with salads, yoghurt with cereal, lemon juice on vegetables like asparagus, cucumber, carrot, raddish.
7. Go low GI when snacking. Grab fresh fruit, dried fruit and nut mix, low fat milk and yoghurt (or soy alternatives), fruit bread etc.

Want to know GI value of some of your favourite meals?

Contact at : drgujral19@gmail.com & www.diabetesheartcare.com

Why old people fall and how to save them?

DR. ADARSH KUMAR, Sr. CONSULTANT (Internal Medicine)
NATIONAL HEART INSTITUTE



Falls in older people are a common, dangerous and frequently incapacitating problem. They are often perceived as being untreatable but this is an overly negative perspective. In any event, in the next few decades we will increasingly be confronted with elderly fallers as life expectancy continues to rise

WHY ARE FALLS IMPORTANT?

Falls in the elderly are a major health problem, first and foremost for the affected individuals whose quality of life is markedly reduced, and also for the public health system because of the immense costs associated with falls and the resultant injuries. The risk of falls increases with age: about one third of those over 65 years of age fall at least once a year, and about half of them even more often. Apart from age, prominent risk factors include previous falls, female gender, concomitant neurological disease, living in a nursing home, fear of recurrent falling, and regular alcohol intake. Falling is serious, for several reasons.

- Falls may cause severe injury, and in up to 25% of elderly fallers, this requires medical attention. Hip fractures are common and widely feared, and secondary complications due to immobility are frequent.

- Secondary immobility after a fall is common, and can be devastating in its own right as this promotes osteoporosis, which in turn increases the risk of fractures following future falls. A driving factor behind immobility is a fear of recurrent falls, which is regularly experienced by elderly fallers and may occur even after a single and seemingly innocent fall. For some patients, this fear of falling is appropriate because their balance is severely disturbed, but for others the degree of fear is disproportionate and leads to unnecessary immobility, loss of independence and even social isolation. Up to 50% of elderly fallers are unable to get up after a fall, not only as a result of injury, but more commonly because of physical frailty and proximal muscle weakness. Patients who lie on the ground for a long time may develop dehydration, pressure sores, rhabdomyolysis, hypothermia or pneumonia, all of which eventually may be fatal.
- Falling and fall-related injuries are a prominent reason for nursing home admission.
- Falls are often a marker for an underlying disease, progression of which may contribute directly to the increased mortality, for example

in patients with cardiovascular or cerebrovascular disease.

- Not surprisingly, quality of life among elderly fallers is markedly impaired. Recurrent falls may reduce life expectancy, either directly (for example, subdural haematoma following head trauma) or indirectly due to complications of the fall.

Physical examination should include a careful gait and balance assessment, preferably using "functional" tests which focus on the performance of everyday activities, a search for underlying risk factors, and any physical injuries. Evaluation of gait is mandatory because any walking problems increase the risk of falling: a shuffling gait increases the risk of stumbling over obstacles, and episodic gait disorders commonly lead to falls because patients are caught unprepared. For example, freezing of gait, where patients suddenly feel as if their feet have become glued to the floor is seen in Parkinson's disease, as well as other parkinsonian disorders.

Orthostatic hypotension is detected by measuring blood pressure, first in a recumbent position (preferably after a rest), and again after 1, 3 and 5 minutes of standing. Meanwhile, the patient should be observed for signs and symptoms of orthostatic hypotension such as "dizziness", pallor, perspiration and stumbling. Note that clinically relevant orthostatic hypotension can be missed if the blood pressure is only measured once, and continuous blood pressure recording while patients are passively tilted upright may even be required.

Assessment of vision with and without correction is important because many falls are related to visual impairment. Paradoxically, poor vision is probably worse than no vision at all ; poor vision provides false feedback and leads to incorrect movement planning.

Were extrinsic or intrinsic risk factors (or both) involved?

The next step is to decide whether the falls were predominantly related to "intrinsic" (patient-related) factors or "extrinsic" (in the environment) factors.

Intrinsic (patient-related) factors : Many elderly people cannot identify clear extrinsic determinants

for their fall, and have repeated falls in seemingly harmless situations. They merit a thorough work-up of intrinsic risk factors as there is a high risk of recurrent falls. Intrinsic risk factors often include one or more underlying disorders, in combination with drugs, alcohol or both.

Use of medication is a prominent risk factor in the elderly. The underlying pathophysiological mechanisms may include a combination of sedation, cognitive impairment, carotid sinus syndrome, orthostatic hypotension, urinary incontinence, behavioral abnormalities, extra pyramidal adverse effects, ataxia, and muscle weakness. Particularly notorious are benzodiazepines and antidepressants, recent initiation of new medication and polypharmacy.

Many chronic diseases are associated with falls. Both acute disorders (for example, delirium, urinary tract infection with urge incontinence) and a wide range of chronic conditions. Note that physical impairments such as urine incontinence or visual impairment are more important than the diseases themselves in predicting recurrent falls. One important example is diabetes mellitus, which may contribute to the risk of falling by various mechanisms, including hypoglycaemia, diabetic retinopathy, polyneuropathy, foot ulcers and stroke. Urge incontinence is also associated with falls, partly because the underlying disease may cause incontinence and falls (for example, stroke), and partly because night-time visits to the toilet in darkness provide ideal falling circumstances. Osteoporosis should be suspected in patients who have low-impact fractures, in nursing home residents, in frail elderly people and those taking steroids.

Extrinsic (environmental) factors :

Extrinsic risk factors include freshly polished floors, wet bathroom tiles, stairs, loose carpets, uneven pavements, poor lighting, stepping onto escalators, and dogs or cats in the household. Inappropriate footwear (high heels, slippery soles or loosely fitting shoes) is another common extrinsic factor. The risk of falling indoors is also associated with walking barefoot, or in socks. Modern buses and trains with their fast acceleration and automatic doors can cause considerable difficulty for elderly. People who may fall before they can find a seat.

HOW TO PREVENT RECURRENT FALLS?

Prevention of falls and subsequent injuries requires treatment of any underlying disorder and elimination of the associated risk factors. Primary *prevention* focuses on elderly people who have not yet fallen, and aims to eliminate risk factors that are common in the elderly such as lack of exercise, or unnecessary use of psychoactive drugs. Tackling risk factors that are only weakly associated with falls, such as inappropriate footwear, may still be rewarding if they are sufficiently prevalent in the general population. Preventing osteoporosis reduces the chance of fracture should the patient fall. Various exercise programs -walking, Tai Chi and dancing-can clearly improve strength, endurance and balance, and several controlled trials have shown a significant reduction in falling."

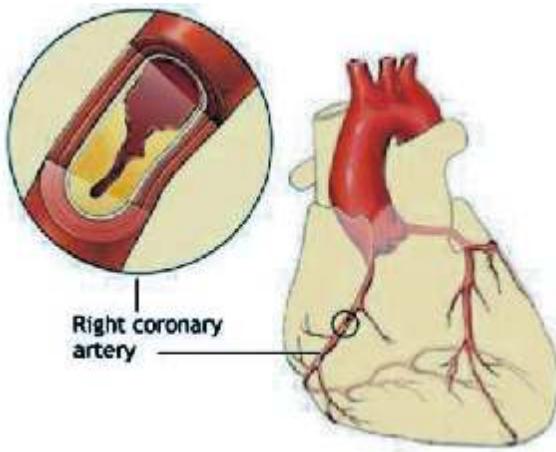
Secondary prevention focuses on elderly people who have fallen at least once and aims to avoid recurrent falls. Here, the emphasis is more on treatment of specific underlying disorders and eliminating intrinsic or extrinsic risk factors that are strongly associated with falls.

Tertiary preventive measures focus on the fear of falling and the resulting immobilization or social isolation. An electronic warning system around the neck or wrist can limit complications in patients who are unable to stand up after a fall. Fear of falling can of course be reasonable in patients with severe balance impairment, and the resultant restriction of mobility can actually serve as an adequate tertiary preventive measure. However, for many, the fear is disproportional to the actual degree of balance impairment and risk of falls. Reduction of fear and regaining confidence is important for these people, because it helps restore mobility and promotes independence. Group treatment using a behavioral-cognitive approach to change attitudes, as well as training with a physiotherapist, might also help. In addition, physiotherapists lay a central role in restoring balance confidence and reducing the fear of falls. However, this positive effect wanes as the patient becomes frailer. An entirely different approach is required for cognitively impaired patients who can be too confident and inappropriately overrate their own balance ability, resulting in risky behavior and falls. For them, restriction of activities might be the best solution to prevent recurrent falls.

ANGER, HOSTILITY AND CORONARY ARTERY DISEASE

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If coronary artery disease (CAD) were to be a polygamous old gentleman, the afore-mentioned would probably be two of his spouses, apart from smoking, diabetes, high cholesterol, hypertension, etc.! But seriously, anger and hostility have been known to play a major role in the outcome of patients with CAD, in spite of which modern medicine tends to target the other 'spouses'! But why neglect these two 'ladies' when studies have clearly delineated the role they play in the course of disease of patients with CAD? Perhaps because there is no specific (read lucrative) therapy or molecule that one could pop and feel the feelings of anger and hostility melt away. Or could it be the very stigma attached to getting therapy for the management of these feelings? After all, our society expects the male to be the lord and master of his clan, and the sight of him receiving therapy for anger and hostility would appear very unbecoming. Amongst the advice dished out by doctors to patients of CAD, the admonition to "bring down stress levels" and "get angry less" often bring up the rear, almost as an afterthought; ("see you after 2 weeks, Mr. Singh. Oh, and do bring down your stress levels and try not to get angry at trifles..."). In today's angst-ridden society, anger and hostility are a given, more so in the younger generation. The rising incidents of shootouts over petty issues, road rage, lynching, etc. bear testimony to how much anger, discontent and hostility simmer underneath the skin of our modern society. The craze for easy money, (fuelled by exposure to the good life courtesy, an overactive media) and the subsequent failure to get it further adds fuel to the fire. All this

makes for a deadly cocktail of discontent, dissatisfaction & frustration, leading on to anger, hostility and an increased risk of poorer outcomes from CAD. But just how does hostility cause such havoc? A study conducted way back in 1987 found two distinct patterns of hostility, namely neurotic hostility and expressive hostility. The former was marked by feelings of resentment, dissatisfaction and low self-esteem; the latter by outbursts of anger, quarrels and sometimes even physical violence. It was found that an increased incidence of expressive hostility in men over 60 years of age was associated with increased incidence of CAD. Another, more recent study in 2008 analyzed all previous databases of studies relevant to the issue. These UK-based researchers found that anger and hostility were associated with increased incidence of adverse CAD events in otherwise healthy populations, and with a risk of poorer outcomes in populations with diagnosed CAD. Simply put, if you are a healthy person and anger and hostility form a staple of your persona, there is 19 percent more chance of you getting an illness associated with CAD (like angina, heart attack, stroke, etc.), than if you were calm and content! Similarly, if you are a diagnosed case of CAD, the figure jumps to 24 percent. However, when these researchers eliminated the usual risk factors for CAD (e.g., smoking, hypertension) from analysis, the association vanished. This implied that anger and hostility increased risk for CAD through common pathways linked to these risk factors. But animal studies have pointed to direct physiologic pathways like nervous system dysfunction, secretion of certain hormones and inflammatory factors during bouts of anger and hostility causing increased risk for CAD. Hence these researchers suggested that the use of psychological management of anger and hostility in the prevention and treatment of CAD would be warranted.

Finally, without getting bogged down in this quagmire of scientific jargon, a few pearls of wisdom as suggested by the Mayo Clinic, USA with regard to anger management would be in order; however, as with our friend, Mr. Singh in the first paragraph, the onus of practically applying these to everyday life lies with the reader, and not the authors!

1. Take a 'timeout.' Although it may seem cliched, counting to 10 before reacting really can defuse your temper.



2. Get some space. Take a break from the person you're angry with until your frustrations subside a bit.
3. Once you're calm, express your anger. It's healthy to express your frustration in a nonconfrontational way. Stewing in your own flames can make the situation worse.
4. Get some exercise. Physical activity can provide an outlet for your emotions, especially if you're about to erupt. Go for a brisk walk or a run.
5. Think carefully before you say anything. Otherwise, you're likely to say something you'll

regret. It can be helpful to write down what you want to say so that you can stick to the issues.

6. Identify solutions to the situation. Instead of focusing on what made you mad, work with the person who angered you to resolve the issue at hand.
7. Use 'I' statements when describing the problem. This will help you to avoid criticizing or placing blame, which can make the other person angry or resentful — and increase tension. For instance, say, "I'm upset you didn't help with the housework this evening," instead of, "You should have helped with the housework."
8. Don't hold a grudge. If you can forgive the other person, it will help you both. It's unrealistic to expect everyone to behave exactly as you want.
9. Use humor to release tensions. Lightening up can help diffuse tension. Don't use sarcasm, though — it can hurt feelings and make things worse.
10. Practice relaxation skills. Learning skills to relax and de-stress can also help control your temper when it may flare up. Practice deep-breathing exercises, visualize a relaxing scene, or repeat a calming word or phrase to yourself, such as "Take it easy." Other proven ways to ease anger include listening to music, writing in a journal and doing gardening.

CARDIOGENIC SHOCK—ETIOPATHOGENESIS & MANAGEMENT

Dr. Sarita Gulati, Senior Interventional Cardiologist
National Heart Institute, New Delhi



Cardiogenic shock is a pathophysiologic state in which inadequate tissue perfusion results from cardiac dysfunction, most commonly following acute myocardial infarction (MI). Although ST-elevation MI (STEMI, previously termed Q-wave MI) is encountered in most patients, cardiogenic shock may also develop in patients with non-ST-elevation acute coronary syndrome (NSTEMI, NSTACS, or unstable angina).

The diagnosis of cardiogenic shock can be made at the bedside by observing hypotension and clinical signs of poor tissue perfusion, which include oliguria, cyanosis, cool extremities, and altered mentation. These signs usually persist after attempts have been made to correct hypovolemia, arrhythmia, hypoxia, and acidosis.

Pathophysiology

The most common initiating event in cardiogenic shock is AMI. Dead myocardium does not contract, and classical teaching has been that when more than 40% of the myocardium is irreversibly damaged (particularly, the anterior cardiac wall), cardiogenic shock may result. On a mechanical level, a marked decrease in contractility reduces the ejection fraction and cardiac output. These lead to increased ventricular filling pressures, cardiac chamber dilatation, and ultimately univentricular or

biventricular failure that result in systemic hypotension and/or pulmonary edema. The SHOCK trial, however, demonstrated that left ventricular ejection fraction is not always depressed in the setting of cardiogenic shock.

A systemic inflammatory response syndrome-type mechanism has been implicated in the pathophysiology of cardiogenic shock. Elevated levels of white blood cells, body temperature, complement, interleukins, and C-reactive protein are often seen in large myocardial infarctions. Similarly, inflammatory nitric oxide synthetase (iNOS) is also released in high levels during myocardial stress. iNOS induces nitric oxide production, which may uncouple calcium metabolism in the myocardium resulting in a stunned myocardium. Additionally, iNOS leads to the expression of interleukins, which may themselves cause hypotension.

Myocardial ischemia causes a decrease in contractile function, which leads to left ventricular dysfunction and decreased arterial pressure; these, in turn, exacerbate the myocardial ischemia. The end result is a vicious cycle that leads to severe cardiovascular decompensation. Other pathophysiological mechanisms responsible for cardiogenic shock include papillary muscle rupture leading to acute mitral regurgitation (4.4%); decreased forward flow, ejection fraction, and ventricular septal defect (1.5%); and free wall rupture (4.1%) as a consequence of AMI.

Right ventricular (RV) infarct, by itself, may lead to hypotension and shock because of reduced preload to the left ventricle. It should be considered in the setting of inferior wall MI.

Cardiac tamponade may result as a consequence of pericarditis, uremic pericardial effusion, or in rare cases systemic lupus erythematosus.

Whenever patients who present in shock have been exposed to medications that may cause hypotension, these drugs should be considered as possible culprits in the disease. Calcium channel blockers may cause profound hypotension with a normal or elevated heart rate. Beta-blocking agents

may also cause hypotension. Hypotension can be seen with or without bradycardia, or AV node block can be seen with either of these types of medications. If these medications are the culprits, therapy directed at these toxicities is beneficial. Nitroglycerin, angiotensin-converting enzyme inhibitors, opiate, and barbiturates can all cause a shock state and may be difficult to distinguish from cardiogenic shock.

Initiating events other than AMI and ischemia include infection, drug toxicity, and pulmonary embolus.

For children, the causes of cardiogenic shock are vastly different. The 3 primary causes of cardiogenic shock in children and infants are viral myocarditis, congenital heart disease, and toxic ingestion.

Incidence

Cardiogenic shock occurs in 8.6% of patients with ST-segment elevation MI with 29% of those presenting to the hospital already in shock. It occurs only in 2% of patients with non-ST-segment elevation MI.

Mortality/Morbidity

Cardiogenic shock is the leading cause of death in acute myocardial infarction (AMI).

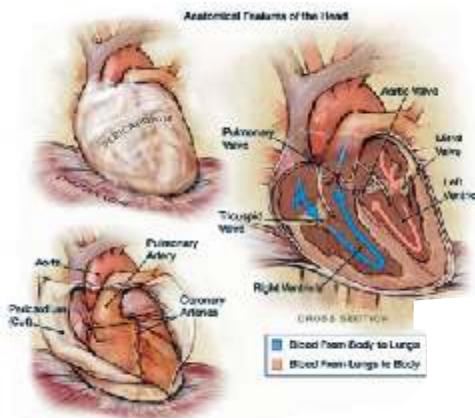
The overall in-hospital mortality rate is 57%. For persons older than 75 years, the mortality rate is 64.1%. For those younger than 75 years, the mortality rate is 39.5%.

Outcomes significantly improve only when rapid revascularization can be achieved. The SHOCK trial demonstrated that overall mortality when revascularization occurs is 38%. When rapid revascularization is not attempted, mortality rates approach 70%.

Rates vary depending on the procedure (eg, percutaneous transluminal coronary angioplasty, stent placement, thrombolytic therapy), but they have been reported to be as low as 30-50%.

Mortality rates have declined over time. In the National Registry of Myocardial Infarction covering the period from 1995-2004, in-hospital mortality declined from 60.3% to 47.9%.²

This improvement has been attributed to the increasing frequency of the use percutaneous coronary intervention (PCI) and other



revascularization procedures. Mortality rates attributable to cardiogenic shock are also thought to be due to the increased frequency of use of PCI, antiplatelet therapies, and lipid-lowering agents in patients with acute coronary syndromes. This has decreased the incidence of cardiogenic shock developing in the hospital due to acute coronary syndromes. The incidence of cardiogenic shock on arrival to the hospital has not changed significantly.^{3,4}

Treatment

Prehospital Care

Prehospital care is aimed at minimizing any further ischemia and shock.

- ◆ All patients require intravenous access, high-flow oxygen administered by mask, and cardiac monitoring.
- ◆ Twelve-lead electrocardiography performed in the field by appropriately trained paramedics may be useful in decreasing door to PCI times and/or thrombolytics because acute ST-segment elevation myocardial infarctions can be identified earlier. The ED, can thus be alerted, and may mobilize the appropriate resources.
- ◆ Inotropic medications should be considered in systems with appropriately trained paramedical personnel.
- ◆ When clinically necessary, positive pressure ventilation and endotracheal intubation should be performed.
- ◆ Continuous positive airway pressure (CPAP) or bilevel positive airway pressure (BiPAP) support can be considered in appropriately equipped systems.

Emergency Department Care

ED care of cardiogenic shock is aimed at making the diagnosis, preventing further ischemia, and treating the underlying cause. Treatment of the underlying cause is directed in the case of acute myocardial infarction (AMI) at coronary artery reperfusion. This is best accomplished with rapid transfer of the patient to a cardiac catheterization laboratory.

Clinicians should be alert to the fact that the SHOCK trial demonstrated that percutaneous coronary intervention (PCI) or coronary artery bypass are the treatments of choice and that they have been shown to markedly decrease mortality rates at 1 year. PCI should be initiated within 90 minutes of presentation; however, it remains helpful, as an acute intervention, within 12 hours of presentation. If such a facility is not immediately available, thrombolytics should be considered. However, this treatment is second best. An increased mortality is seen in situations where thrombolytics are used instead of PCI. This is due to the relative ineffectiveness of the thrombolytic medications to lyse clots in low blood pressure situations⁶⁵.

- ◆ The airway should be assessed for patency and breathing evaluated for effectiveness and increased work of breathing. Endotracheal intubation and mechanical ventilation should be considered for patients with excessive work of breathing. Positive pressure ventilation may improve oxygenation but may also compromise venous return, preload, to the heart. In any event, the patient should be treated with high-flow oxygen.
- ◆ Other interventions are directed at supporting myocardial perfusion and maximizing cardiac output. Intravenous fluids should be provided to maintain adequate preload. The administration of such fluids should be guided by central venous pressure, pulmonary capillary wedge pressure monitoring, or sonographic assessment of IVC filling.
- ◆ Anticoagulants and aspirin should be used as in other cases of acute myocardial infarctions. Care should be taken to ensure that the patient does not have myocardial wall rupture that is amenable to surgery before initiating therapy. There is no need to start clopidogrel until after angiography as this may determine a need for urgent coronary bypass.

Intravenous vasopressors provide inotropic support increasing perfusion of the ischemic myocardium and all body tissues. However, extreme heart rates should be avoided because they may increase myocardial oxygen consumption, increase infarct size, and further impair the pumping ability of the heart. No particular vasopressor has been shown to be superior to another. Carefully chosen combinations of pressors may be useful.

- Dopamine may provide vasopressor support. With higher doses, it has the disadvantage of increasing the heart rate and myocardial oxygen consumption.
- Dobutamine, inamrinone (formerly amrinone), or milrinone may provide inotropic support. In addition to their positive inotropic effects, inamrinone and milrinone have a beneficial vasodilator effect, which reduces preload and afterload.
- Norepinephrine infusion can also be considered in refractory cardiogenic shock, though it significantly increases afterload.

Nitrates and/or morphine must be used with caution because these patients are in shock, and excessive use of either of these agents can produce profound hypotension.

Mechanical device supports may be used to support patients in cardiogenic shock.

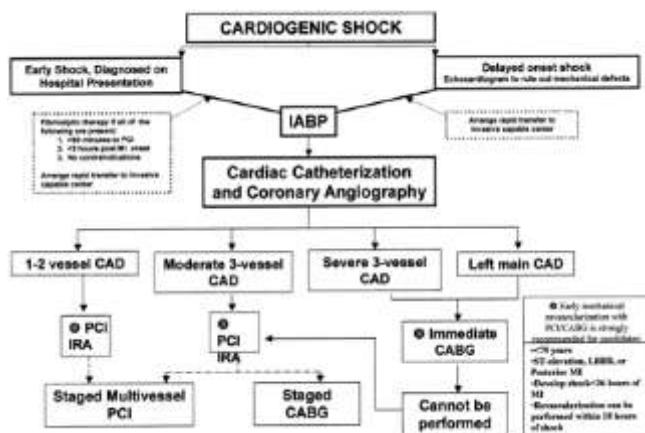
- The use of an intra-aortic balloon pump (IABP) is recommended for cardiogenic shock not quickly reversed with pharmacologic therapy. It is also recommended as a stabilizing measure combined with thrombolytic therapy when angiography and revascularization are not readily available. Counterpulsation of the IABP reduces LV afterload and improves coronary artery blood flow.
- Left-ventricular assist devices (LVAD) may be used in selected patients with refractory shock as a bridge to cardiac transplantation. This is still controversial and requires the assistance of cardiologists and cardiac surgeons. LVADs have not been shown to be superior in terms of outcomes.

Revascularization

Revascularization with percutaneous intervention or coronary artery bypass surgery should be considered. Thrombolytics to be considered only if PCI/CABG not available.

The SHOCK trial found that early revascularization (angioplasty or coronary artery bypass graft) improves 1-year survival in patients under the age of 75 with acute myocardial infarction and cardiogenic shock when compared to medical treatments (including thrombolytic and intra-aortic balloon counter pulsation). This survival advantage seems to persist at 3 and 6 years.

The American College of Cardiology and American Heart Association Guidelines suggest



that patients who arrive at hospital in cardiogenic shock, or who develop it after arrival, are transferred to a centre where revascularisation can take place.

Bottom of Form

TREATMENT ALGORITHM

Intra-aortic balloon pump (IABP) is recommended when shock is not quickly reversed with pharmacological therapy, as a stabilizing measure for patients who are candidates for further invasive care. Dashed lines indicate that the procedure should be performed in patients with specific indications only. LBBB indicates left bundle-branch block. PCI stands for percutaneous coronary intervention. IRA denotes Infarct related artery (causing myocardial infarction).

Cardiogenic shock arising in the setting of acute MI is an emergency which requires immediate services of interventional cardiologist and should be referred to such a centre without losing time.



The 2009 World Diabetes Day

On 15 th November 2009 the CDRS along with A Block defence colony welfare Association Club conducted a mega event. More than 350 persons attended the day long programme that included :

- * Free diabetes & Heart Check up * Free medicines * The walk for Diabetes
- * Audiovisuals * Diet Counseling * Foot Care Workshop

News from the World of Diabetes

It's Final : New ADA Guidelines Urge A1C Test for Diabetes Diagnosis

The ADA will publish the new guidelines in the January issue of Diabetes Care. The A1c blood test may catch Type 2 diabetes, prediabetes sooner, with no fasting.

In its latest set of clinical guidelines, the American Diabetes Association is promoting a more prominent role for the hemoglobin A1c blood test in the diagnosis of Type 2 diabetes and prediabetes.

Long used in the management of diabetes, the A1c blood test measures average blood sugar levels for the previous two to three months. The new guidelines call for the diagnosis of Type 2 diabetes at A1c levels above 6.5 percent, and prediabetes if the A1c levels are between 5.7 and 6.4 percent.

The A1c isn't necessarily superior to other methods used to detect Type 2 diabetes and prediabetes, such as fasting blood sugar tests and the oral glucose tolerance test, but it is easier and more convenient for people because you don't have to fast before an A1c test.

In the past, the A1c wasn't recommended for use in the diagnosis of diabetes because the test wasn't standardized from lab to lab, according to the ADA. That means a reading of 6.5 percent at one lab could have been 6.3 percent at another. Now, the test is highly standardized, according to the ADA, making it a useful tool for detecting diabetes and prediabetes without the need for fasting. We may diagnose more people because the A1c is used a lot more now because of its convenience.

The A1c measures the percentage of hemoglobin (the main component of red blood cells) in the blood that is glycated. Glycated hemoglobin is hemoglobin that has a blood sugar molecule attached to it, which happens when blood sugar levels are higher than they should be.

Generally, people without diabetes have an A1c level of less than 5 percent.

This percentage gives the doctor an idea of what the patient's blood sugar levels have been for the past two to three months, which may help diagnose more people with Type 2 diabetes and prediabetes sooner than they might have been in the past.

This is a very practical, innovative concept people don't need to be fasting for an A1c, and there are fewer variables that can affect the outcome of the A1c. diabetes is grossly underdiagnosed and prediabetes, even more so. It's a real problem, and these guidelines may help sensitize the medical community to it.

SOURCES: Richard Bergenstal, M.D., president-elect, medicine and science, American Diabetes Association; Michael Bergman, M.D., endocrinologist and clinical associate professor, NYU Langone Medical Center, New York City; January 2010, Diabetes Care

Soon, Contact Lenses to Help Manage Diabetes

Daily News & Analysis (India) December 27, 2009

Researchers at the University of Western Ontario have developed contact lenses that could help people with diabetes manage their blood-sugar levels.

The contacts, which were developed by chemical and biochemical engineering professor Jin Zhang, are embedded with extremely small nanoparticles that react with glucose molecules in tears. The chemical reaction between the nanoparticles and the glucose molecules changes the color of the contacts. Researchers say the contacts may someday eliminate the need for diabetes patients to test their blood-sugar levels by repeatedly drawing blood.

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Daily News & Analysis (India) (12/27/2009)

Food Sweetener Could Be 'Fuelling' Childhood Diabetes.

December 13, 2009

Fructose may increase the risk of diabetes and heart disease independent of weight gain, according to researchers at the University of California.

Their study involved 16 volunteers who were put on a 10-week diet with high levels of fructose. At the end of the study period, the subjects had developed more fat cells around the heart, liver, and other major organs, and they also showed signs of food-processing abnormalities that have been linked to diabetes and heart disease. Another group of volunteers, individuals who had also been on a controlled diet without the fructose, did not show the same fat cell increase or abnormalities, though both groups put on the same amount of weight.

Glycemic Index Education Leads to Better Diabetes Control.

News wise December 15, 2009

Adults with type 2 diabetes can adopt better dietary habits and improve their health through nine weekly education sessions, researchers suggest.

The researchers conducted a study involving 103 participants, ages 40 to 70 years, who had been diagnosed with type 2 diabetes and did not need insulin therapy. The participants attended weekly sessions to learn about the benefits of low-glycemic-index foods, including portion size, behavioral change, and carbohydrate counting. After nine weeks, the participants showed a lower glycemic-index diet, an average of 5.1 pounds lost, decreased waist circumference of about 1.1 inches, and improved blood sugar levels. The participants maintained most of the benefits after another nine weeks. The study is published in the journal Public Health Nutrition.

YOU ASKED FOR IT...

... A CDRS Community Health Education Service.



Question : (Manjeet singh ... NDSE – II
New Delhi)

Can exercise cause my blood glucose to drop hours later?

Answer : Yes.

Depending on the intensity and duration of your activity, you can burn glucose for up to 24 hours after exercise. With long or hard exercise, you use glucose stored in your liver for fuel. After the exercise is over, your body wants to replenish those glucose levels as soon as possible. If there is no food available, the glucose is pulled from your blood stream, which can cause hypoglycemia.

To help prevent low blood glucose, check your blood glucose about every 45 minutes after a hard workout and gauge whether your blood glucose is going down, going up, or leveling off. If it is going down, eat a few carbs and keep checking until you level off.

Question : (Sulbha Shrotia.... East of
Kailash New Delhi)

Does diabetes put me at risk for developing thyroid problems?

Answer : Perhaps.

The thyroid gland in your neck secretes thyroid hormone. Low levels of thyroid hormone (thyroid failure) are common in individuals with type 1 diabetes. Thyroid hormone gives you energy and helps maintain other organ systems in your body.

We recommend that you get a blood test for thyroid hormone once a year, particularly if you feel more tired than usual or have other symptoms such as constipation, dry skin, and feeling cold most of the time.

Treatment is easy and inexpensive. This is important, because when low thyroid hormone goes untreated, it can lead to many medical problems. Do not hesitate to ask your doctor periodically to check your blood thyroid hormone level. Remember that other medical problems can occur in people with diabetes that are not directly related to high blood glucose levels.

Question : (Surabhi, NOIDA (UP.)

I'm worried about this sore on my foot that the doctor called a foot ulcer. What is a foot ulcer?

Answer :

An ulcer is an open sore. People with diabetes are more likely to get foot ulcers for three reasons. First, many people with diabetes have lost some feeling in their feet because of nerve damage, so they might not notice tiny cuts or cracks in the skin that could lead to serious problems. Second, many people with diabetes also have circulation problems, so it is hard to get oxygen, white blood cells, and antibiotics to the wound to help it heal. That's why many people with diabetes find that any wound, even the smallest one, can take a really long time to heal. In fact, without an adequate blood supply, foot ulcers may never heal. Finally, high blood glucose levels also hinder healing.

Foot ulcers can appear any place on your feet, though most often they are on the bottom or side of your big toe and on the ball of the foot. Prevention is essential. Pamper your feet. Keep them clean, dry, and protected from injury. Watch them like a hawk. If you see any sign of an open cut or sore, no matter how small, contact your health care provider immediately. You might also ask for a referral to a podiatrist, someone who specializes in treating foot problems.

Question : (Santosh Kumar, DLF City,
Gurgaon, Haryana)

How can I stop worrying so much about complications?

Answer :

First, do everything you can to prevent them. Keeping your blood glucose close to normal makes complications less likely, and that might help you

worry less. Talk to your health care providers on a regular basis. They can help you take better care of yourself and check to see if you have any signs of complications, so any problems can be treated as quickly as possible. Knowing you have good care and good control can put a lot of fears to rest.

Share your feelings with family or friends who might be able to offer support. Consider joining a diabetes support group. There you will see that your feelings are not that unusual (and probably pick up some new tips for improving your glucose control). It can also help to connect with the sources of confidence and peace of mind that mean the most to you. Religious faith can be a tremendous source of strength and serenity, and so can the loving support of family and friends or the confidence you feel in yourself when you know you are taking good care of yourself.

Finally, consider this homily: "Worry never robs tomorrow of its sorrow; it only saps today of its strength."

Question : *Would an insulin pump help me prevent complications?*

Answer : Maybe.

If it helps you keep your blood glucose close to normal levels, yes. But an insulin pump is not for everyone. If you have been unable to get your blood glucose levels into goal range, a pump may be a good choice for you. A pump, also called a "continuous subcutaneous insulin infusion system," can do some things that conventional insulin injection therapy can't. Using a pump requires motivation and a willingness to measure your blood glucose four or more times a day and to make decisions based on the results. A pump cannot "read" your blood glucose, so you have to do blood glucose tests regularly to tell the pump how much insulin you need. The downside is the cost. A pump costs about Rs.1,50,000 to start and about Rs.6000 a month to maintain. You should talk to your health care team and insurance company about whether a pump would be a good idea for you. Newer pumps have more features and are more reliable than older models. More features allow more flexibility of lifestyle to help you stay in good control.

Question: (Anirudh Khosla, Dehradun U.P.)

I use my computer to get a lot of diabetes information because it's so easy. Is the information about diabetes on the Internet reliable?

Answer : Not always.

Though there is an amazing amount of valuable information on the Internet, a good portion of it is bunk. Along with lots of valid and helpful information, you will also find personal experiences that don't apply to you and outrageous claims designed to sell you a product. Separating the good from the bad can be difficult. The CDRS (www.diabetesheartcare.com) American Diabetes Association (www.diabetes.org) and the American Association of Diabetes Educators (www.aadenet.org) are good places to start when you want information, because they sponsor reliable sites. Many other organizations also sponsor web sites featuring the latest diabetes research and other helpful information. There are also chat rooms where you can "talk" to other people who have diabetes and share experiences. You can learn a lot in a chat room, but keep in mind that you are hearing peoples' personal experiences, and these experiences might not apply to you. Before you act on something you see on the Internet concerning your diabetes, talk with your health care team to be sure it is right for you.

Question : (Kumar Bansal, Patel Nagar, New Delhi)

I have type 2 diabetes and I worry about other family members getting it. Is there any way it can be prevented?

Answer : The short answer is yes.

A recent study was conducted using people who were overweight and had a condition called Impaired Glucose Tolerance (IGT), sometimes called pre-diabetes. People with IGT have high blood glucose levels but not high enough to be called diabetes. About half of all people with IGT eventually develop type 2 diabetes.

There were 3 groups. One group received coaching in a healthy lifestyle designed to help them lose weight. Their goal was to be active (for most, this meant walking) 30 minutes a day, 5 days a week, and to lose 7% of their weight and keep it off. The 2 other groups took pills. One group took a medication called metformin and the other group took placebo pills that looked just like the metformin but had no active medication.

The results of the study were impressive. People in the group who made lifestyle changes were 58% less likely to develop diabetes during the study than the people in the placebo medication group. Metformin also helped prevent diabetes during this study, but it was only half as effective as lifestyle changes. So, yes, it is possible to prevent diabetes, though we don't know for how long.

DOCTOR's ROOM

New data on the effects of aspirin in diabetes

January - 4 - 2010 A meta-analysis of prospective, randomized, controlled studies included in the Medline, the Cochrane Library and reference lists assessed the effects of low-dose aspirin in patients with diabetes and no pre-existing cardiovascular disease. The analysis of 6 studies indicated that the benefits of aspirin for primary prevention of cardiovascular events in diabetics may be lower than expected, since no relevant reductions in the risk of major cardiovascular events and cardiovascular or all-cause mortality were observed when compared to placebo or no treatment. However, the risk of myocardial infarction was significantly reduced by 43% in men taking aspirin, but not in women (De Berardis, G. et al. BMJ 2009, 339: b4531).



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