

# Coronary artery bypass surgery: Know the facts

DR MH MILLAT

Coronary artery bypass surgery, commonly called CABG is one of the most common and effective surgical procedures to manage blockage of blood to the heart muscle.

The surgery reroutes, or "bypasses," blood around clogged arteries to improve blood flow and oxygen to the heart. Coronary bypass surgery remains one of the gold standard surgical treatments for coronary artery disease.

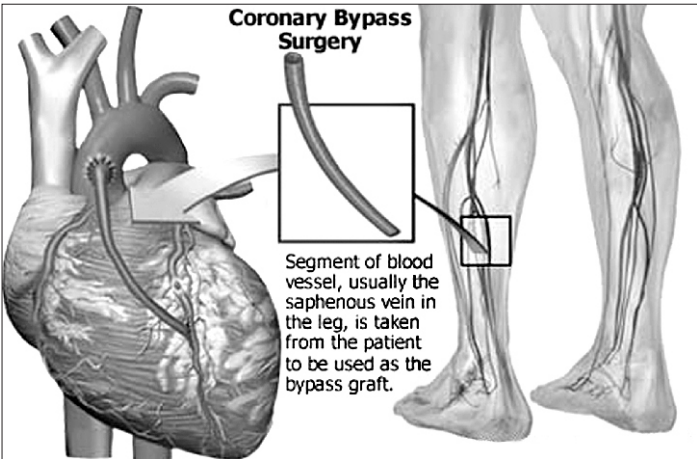
The aim of CABG is to reduce the chance of heart attack, increase life expectancy and improve quality of life. Every year more than one million CABG performed world wide. Last year over 7 thousands CABG were done in Bangladesh.

Your heart needs blood and oxygen to perform its job. Left and right coronary arteries through their branches deliver a constant supply of much-needed blood and oxygen to the heart muscle. When one or more of these arteries

becomes narrowed or clogged, blood and oxygen are reduced and heart muscle is damaged.

According to American heart Association and American College of Cardiologists, there are many indications for CABG. CABG may not be suitable for all patients with angina (pain in the chest caused by inadequate supply of blood to the heart muscles, following exercise or eating, because of narrowing of the arteries).

We need to access the patient individually. There are following indications, when we consider patients for CABG. When you have debilitating chest pain caused by narrowing of several of the arteries that supply your heart muscle; you have more than one diseased coronary artery and the heart's main pump (left ventricle) is functioning poorly; your left main coronary artery is severely narrowed or blocked; you have an artery blockage for which angioplasty is not appropriate; you have had a previous angioplasty or stent placement



has not been successful; or you have had angioplasty but the artery has narrowed again (restenosis).

CABG generally takes between three and six hours and requires general anesthesia. On an average, surgeons repair two to four coronary arteries. Surgeons take a segment of a healthy blood vessel from another part of the body and make a detour around the blocked part of the coronary artery. An artery may be detached from the chest wall and the

open end attached to the coronary artery below the blocked area. A piece of a long vein in your leg may be taken. One end is sewn onto the large artery leaving your heart—the aorta. The other end of the vein is attached or "grafted" to the coronary artery below the blocked area.

Either way, blood can use this new path to flow freely to the heart muscle. Cardiopulmonary bypass with a pump oxygenator (heart-lung machine) is used for most coronary

bypass graft operations.

During the past several years, more surgeons have started performing off-pump coronary artery bypass surgery (OPCAB or Beating heart Surgery). In this case, the heart continues beating while the bypass graft is sewn in place. It is not an option for everyone.

In the USA, the UK and Australia, approximately 20 percent of CABG are done on beating heart. In India this procedure is done in about 40 percent of all CABG.

The long-term outcome of this type of procedure is not yet known. In Minimally invasive cardiac surgery, a surgeon performs coronary bypass through several smaller incisions in the chest. This technique is usually used only when certain conditions exist.

If multiple coronary arteries need to be worked on, it is best to use a conventional approach. Variations of minimally invasive surgery may be called port-access or keyhole surgery.

Lifestyle changes are still neces-

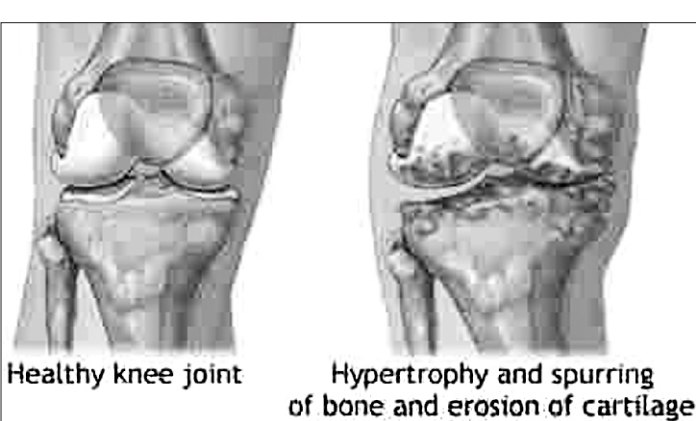
sary and an integral part of treatment after CABG. Lifestyle changes — especially smoking cessation — are crucial to reduce the chance of future blockages and heart attacks, even after successful bypass surgery.

In addition, you will likely need to make other lifestyle changes, such as reducing certain types of fat in your diet, increasing physical activity, and controlling high blood pressure, diabetes, stress, obesity and other risk factors for heart disease.

Medications are routine after heart surgery to lower your blood cholesterol, reduce the risk of developing a blood clot and help your heart function as well as possible.

Most people with sedentary office jobs can return to work in four to six weeks. Those with physically demanding jobs will have to wait longer.

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## INTERVIEW STORY

## "How to keep your joints healthy"

ZAM KHAIRUZZAMAN

Kulsum's pain was unbearable. She could not walk or bend. "The pain was constant and unbearable ..." she recalls.

Ummey Kulsum, wife of a university teacher at Rajshahi had been suffering from osteoarthritis (OA).

X-ray revealed that she had the knee joint of a 80-year-old though she was only 39. The shock absorbing cartilage between the right femur and tibia, the bones that meet at the knee, had gradually worn away leaving bone scraping against bone — the source of her constant pain.

As many as six to eight percent people in Bangladesh are afflicted with OA of the hip or knee, says Dr Hasan Masud, an orthopaedic surgeon of National Institute of Traumatology and Orthopaedic Rehabilitation (NITOR).

OA is a major cause of disability in people aged 60 and older. Despite its public health impact, the disease continues to be a relatively unaddressed health issue. Nobody knows for sure what causes OA, but Dr Masud says heredity, excess weight and previous joint injuries are major factors behind the disease.

"It is a common disease among women in Bangladesh," says Dr Masud. "Women are at increased risk because they sit or stand for prolonged periods, or most frequently lift heavy objects," he added.

Women are prone to OA in their knees. Study revealed, hormonal changes during a woman's menstrual cycle affect the elasticity of the body's ligaments. Women's knee muscles do not contract under stress as men's do, putting their knee joints at greater risk. Women who play sports involving jumping are up to eight times more likely to injure their knees than men playing the same sports.

Many people still regard it as a disease of elderly people. But OA may strike at any age, Dr Masud says, adding there is no cure for OA. Generally speaking, the process of clinically detectable osteoarthritis is irreversible and typical treatment consists of medication or other interventions that can reduce the pain of OA and thereby improve the function of the joint, he says.

The old adage "no pain, no gain" does not apply to people with arthritis. Pain during exercise is the body's mechanism for telling you to stop. A better cliché might be "move it or lose it." Exercise has been found to have substantial benefits depending on an individual's arthritis and the chosen exercise.

If the conservative management is ineffective, joint replacement surgery may be required, Dr Masud informs. Joints of individuals with very painful OA may require surgery such as fragment removal, repositioning bones, or fusing bone to increase stability and reduce pain.

The success rate of knee and hip replacement depends upon sterility of the environment and associated materials, Dr Masud says.

While speaking about cost, Dr Masud says actually the implant which we use for knee replacement costs about one lakh thirty thousand taka. However, no matter what the severity or where the OA lies, conservative measures, such as weight control, appropriate rest and exercise, and the use of mechanical support devices are usually beneficial to sufferers, he suggests.

Dr Masud informs that there is also a new procedure to knee and hip replacement — cartilage cell transfer, microfracture procedure or arthroscopic lavage or debridement.

About the treatment facilities in the future, he mentioned about rotational field quantum magnetic resonance (RFQMR), low level laser therapy, phototherapy and radiosynoviotriesthesis.

Dr Masud encourages healthy persons regular exercise, if possible, in the form of walking or swimming to take care of joints. One must control his or her weight and eat a healthy diet, he says.

He stresses on different types of exercise to achieve different goals. One can check with his/her doctor before beginning a regular exercise programme.

Your doctor may recommend working with a physical therapist who can design an exercise programme to meet your specific needs, and who may also perform manual exercises that stretch and strengthen the muscles around your arthritic joints, he says.

Dr Masud concludes saying, "Walking is a good starter exercise. If you can't walk, try a stationary bicycle using no resistance or do hand or arm exercises. Aquatic exercise is another option, and many health clubs with pools offer classes. Maintain good posture while you exercise. Avoid exercising tender, injured or severely inflamed joints. If you feel new joint pain, stop. New pain that lasts more than two hours after you exercise probably means you've overdone it. If pain persists for more than a few days, call your doctor."



DR TAREQ SALAHUDDIN

## New WHO report tackles children's environmental health

STAR HEALTH DESK

The World Health Organisation (WHO) has released the first ever report highlighting children's special susceptibility to harmful chemical exposures at different periods of their growth.

The scientific principles proposed in the document for evaluating environmental health risks in children will help the health sector, researchers and policy makers to protect children of all ages through improved risk assessments, appropriate interventions and focused research to become healthy adults.

"Children are not just small adults" said Dr Terri Damstra, WHO's team leader for the Interregional Research Unit. "Children are especially vulnerable and respond differently from adults when exposed to environmental factors, and this response may differ according to the different periods of development they are going through. For example, their lungs are not fully developed at birth, or even at the age of eight, and lung maturation may be altered by air pollutants that induce acute respiratory effects in childhood and may be the origin of chronic respiratory disease later in life."

Air and water contaminants, pesticides in food, lead in soil, as well as many other environmental threats which alter the delicate organism of a growing child may cause or worsen disease and induce developmental problems. Over 30 percent of the global burden of disease in children can be attributed to environmental factors.

Children have different susceptibilities during different life stages, due to their dynamic growth and developmental processes. Some examples of health effects resulting from developmental exposures prenatally and at birth include miscarriage, still birth, low birth weight and birth defects; in young children, infant mortality, asthma, neuro-behavioural and immune impairment; and in adolescents, precocious or delayed puberty.

Emerging evidence suggests that an increased risk of certain diseases in adults such as cancer and heart disease can result in part from exposures to certain environmental chemicals during childhood.

The vulnerability of children is increased in degraded and poor environments. Neglected and malnourished children suffer the most. These children often live in unhealthy housing, lack clean water and sanitation services, and have limited access to health care and education.

For example, lead is known to be more toxic to children whose diets are deficient in calories, iron and calcium. One in five children in the poorest parts of the world will not live longer than their fifth birthday, mainly because of environment-related diseases.

This central focus of this new study is on the child including developing embryo, fetus, infant and adolescent, and on the need to have a good understanding of the interactions between exposure, biological susceptibility, and socioeconomic and nutritional factors at each stage of a child's development.

## HIV Pathogenesis, Treatment and Prevention update-2

## Modern technology and ancient surgery battle AIDS

Circumcision could save millions from AIDS

The emergence of new and improved drugs, genetic engineering and the ancient surgical practice of circumcision are the latest weapons in the fight against AIDS, the International AIDS Society (IAS) conference in Sydney, Australia was told.

A new batch of drugs that slow the progress of HIV in patients and genetically modified cells that prevent further infections are about to become available or trialed, doctors told the world's largest AIDS conference.

"It's an extremely exciting time in terms of drug development. We have better drugs in existing classes, as well as whole new classes of drugs," said Professor David Cooper, co-chairman of the 2007 IAS conference in Sydney.

"Patients and their clinicians now have a much wider choice of drug combinations than ever before," said Cooper, director of Australia's National Centre in HIV Epidemiology and Clinical Research at the University of New South Wales.

But the biggest breakthrough for the world's poorest nations, which will not initially be able to afford these new drugs and which carry the heaviest AIDS burden, lies in a procedure dating back to at least 2,300 B.C. in Egypt — circumcision.

Millions of new HIV infections could be avoided if more men were circumcised, IAS conference was also told.

African studies have shown that male circumcision can reduce HIV transmission from women to men by about 60 percent, said Professor Robert Bailey at the School of Public Health at the University of Illinois at Chicago.

Universal circumcision could avert two million new infections and 300,000 deaths in sub-Saharan Africa over 10 years, he said.

"If we had a vaccine that was 60 percent protective we would be very happy and rolling it out as fast as possible," Bailey told the IAS conference in Sydney.

"But no one stands to profit from male circumcision — no one but the 4,000 in Africa who will be infected tomorrow."

The idea of using circumcision as a weapon against AIDS emerged after studies in Uganda, Kenya, Malawi, Zambia and the United States found the potential to significantly reduce infections, said Bailey, adding the World Health Organisation has now endorsed circumcision

as a disease prevention method.

"The challenge ahead for us is how to roll out circumcision safely ... and to persuade leaders in countries that it is going to help their populations," Bailey told a news conference.

### New drugs

New drugs and improved second-generation drugs will not only be more effective in fighting HIV, the IAS conference was told, but could offer treatment to patients whose disease had become immune to earlier drugs.

Recent research has shown that new classes of anti-retroviral drugs, which include various inhibitors, provide superior benefit to patients with highly resistant HIV, said Joseph Eron, professor of medicine at the University of North Carolina.

"I think that while it will take some time, some of these new agents will also be very useful in the developing world where we are seeing the emergence of resistant virus," said Eron in detailing the new drugs.

At the cutting edge of the AIDS battle is genetic engineering, with human trials about to start on genetically modifying a HIV patient's blood stem cells and T cells and reintroducing them into the body to better fight the disease.

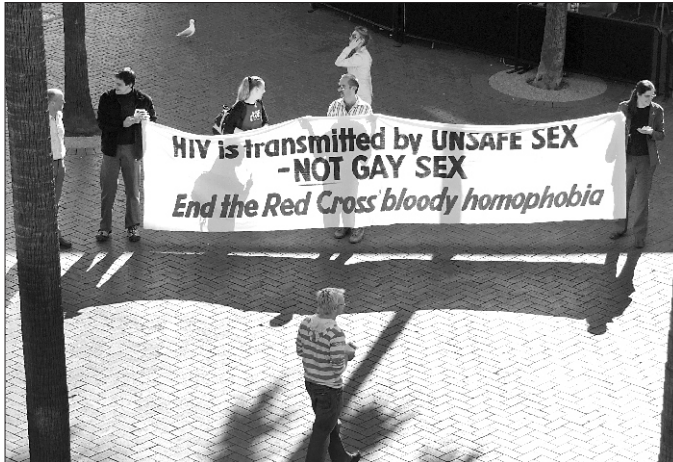
"This is a permanent modification of the cells. As long as the cells persist in the patient they will be resistant to further infection," said Professor John Rossi, head of biological sciences at the U.S. Beckman Research Institute.

"We realise that this is not a treatment that will be applied universally," said Rossi, adding the treatment should allow patients to reduce drug dosage.

Rossi and Eron called on drug companies to make new drugs available to the world's poorer nations.

Medecins Sans Frontieres (MSF) told the IAS conference said that while there had been dramatic price reductions in some HIV drugs, the newer, less toxic drugs recommended by the WHO had become more expensive. An MSF report said some new drugs had risen in price by nearly 500 percent from \$99 to up to \$487.

The United Nations says close to 40 million people are infected with HIV and that treatment had dramatically expanded from 240,000 people in 2001 to 1.3 million by 2005.



DR TAREQ SALAHUDDIN

Gay community protests outside the Sydney Convention Centre during the IAS Conference last July holding banner.

## Global initiative to combat spread of HIV among MSM

amfAR, The Foundation for AIDS Research, announced in a press conference in International AIDS Society (IAS) conference in Sydney, Australia the launch of a new global initiative to fight the spread of HIV among men who have sex with men (MSM) in the developing world.

In many parts of Asia, Africa, Eastern Europe, and Latin America, stigma, criminalisation, and lack of access to health services have sparked alarming epidemics that threaten to devastate MSM communities, mirroring the HIV pandemics that ravaged gay communities in North America and Western Europe in the 1980s.

Male-male sex is illegal in 85 countries, making MSM extremely vulnerable to HIV/AIDS. Fewer than one in 20 MSM around the world has access to HIV prevention, treatment, and care, according to UNAIDS. MSM groups rarely benefit from international HIV prevention efforts because bilateral funding and grants from the Global Fund to Fight AIDS, Tuberculosis and Malaria flow primarily through national governments that largely ignore the needs of MSM.

"Empowering MSM and other marginalised groups to protect themselves from HIV is one of the world's most urgent health priorities," said Dr. Peter Piot, executive director of the Joint United Nations Programme on HIV/AIDS (UNAIDS).

The Initiative, which was launched at the International AIDS Society conference in Sydney, will support grassroots MSM organisations, fund critical research, and advocate for increased global attention and funding for HIV/AIDS programmes specific to MSM.

The Initiative will also support

epidemiological, demographic, and policy research to inform more effective HIV prevention efforts. New data indicates that the HIV pandemic among MSM is widespread and worsening.

"The frightening truth is that, in many parts of the world, we simply do not know how bad the epidemics among MSM groups may be," said Dr. Chris Beyrer, director of the Johns Hopkins Fogarty AIDS International Training and Research Programme in the United States. "Transmission among MSM is still not tracked in most countries, resulting in a significant research gap. More research is urgently needed to inform more effective HIV prevention efforts."

"A quarter century into the epidemic, MSM in many countries still do not have even the basic tools to protect themselves against HIV," said amfAR Acting CEO Kevin Frost.

"We must have the courage to stand side by side with the grassroots organisations on the front lines of this epidemic delivering services and demanding greater action from governments. With funding and support, these organisations can transform attitudes, change policy, and mobilise funding to reverse the alarming spread of HIV among MSM."

The MSM Initiative has already enlisted partners from a number of leading organisations.

"A coordinated global initiative is urgently needed to reverse the alarming rise in new infections among MSM," said George Ayala, director of education at the AIDS Project Los Angeles (APLA), one of the Initiative's partner organisations. "Working together, we can more effectively fight the denial and discrimination that have made MSM so vulnerable to HIV..."

## Health Events

## FPAB hold views exchange with Health Reporters Forum

STAR HEALTH DESK

Family Planning Association of Bangladesh (FPAB) organised a views exchange discussion with the members of the Health Reporters Forum (HRF) at its head office in Dhaka yesterday, says a press release.

About 25 members of HRF and high officials of the FPAB took part at the discussion. They discussed on various issues related to reproductive health, role of media and family planning to build a better nation, create awareness against violence on women, gender disparity, maternal health, adolescents' rights and rapidly growing population in the perspective of Bangladesh.

FPAB director general Dr Halida Hanum Akhter presented a keynote paper on "Sexual and reproductive rights" in the meeting.

She said at her presentation that

47 per cent women in Bangladesh experience physical violence. About 67 per cent women and girls experience domestic violence while 60 per cent men deem that violence against women. About 14 per cent maternal deaths are caused by violence during pregnancy.

She discussed about the elements of reproductive health that include family planning, safe motherhood, safe abortion facilities, infant and child care, male participation and responsible behaviour adolescent reproductive health, infertility, RTI and STDs, HIV/AIDS, cancers of reproductive tract and reproductive health needs of disables.

President of FPAB, Professor Abul Kashem presided over the programme while the Secretary of BCC, FPAB, Saleh Uddin Khan, focal paper on (Advocacy) of FPAB, Gomal Kibria Pinu and HRF President Alpha Arzu spoke at the programme.



Sanofi-Aventis, a leading pharmaceutical company in Bangladesh recently organised an awareness programme on epilepsy in the city. Eminent neuroscience specialists spoke in the programme. Mr Iftekharul Islam, Managing Director of Sanofi-Aventis, Bangladesh speaking at the programme is seen in the photo.