

## History of heart transplant

DR MD HABIBE MILLAT

I would like to start with my personal experience in heart transplant. In May 2002, I was working as a Senior Specialist Registrar in Cardiothoracic Surgery at the Mater Misericordiae Hospital. This is the only adult cardiac transplant centre in Ireland.

After a long day, we were preparing to go home, at that time; the heart transplant co-ordinator came to the operation theatre and informed us that there is a possible heart transplant tonight. The donor, 21 years old man, was involved in a road traffic accident, already brain dead. He was dependent on the breathing machine at Cork University Hospital. Within next hour we were informed that the donor was suitable for harvesting the heart, kidney and liver. In the mean time a suitable heart recipient was contacted. Harvesting time was fixed at mid night. The transplant coordinator was trying to organise a helicopter for our harvesting team. Due to stormy weather, it was not safe to fly with a helicopter. The Irish air force was contacted and soon they confirmed the availability of an aeroplane. I, along with two

other team members flew to Cork, approximately 275 kilometres away from Dublin. We harvested the heart and flew back to Dublin. We were unable to land at the Dublin airport due to storm and we landed at the air force base some 40 kilometres away. Time was of essence for us because it is better to transplant as soon as possible after harvesting. If delayed there would be irreparable damage to the donor heart. We arrived at Mater hospital by an ambulance just after 2 am, where recipient team was ready to transplant. The transplant was successful and the patient left the hospital few days later.

Infants and children may need heart transplants as well as the adults. Infants and children with complex forms of congenital heart defects (most commonly hypoplastic left heart syndrome a condition where heart's lower left pumping chamber and the large artery that carries blood to the body are too small to support normal flow) and also with dilated cardiomyopathy (heart cavity is enlarged, stretched, weak and doesn't pump normally) may need heart transplant.

In simple term heart transplant means harvest of a healthy human heart from a suitable

donor and transplant to a suitable recipient after removing the recipient's diseased heart.

46 years ago, Dr Christian Barnard achieved a milestone in the medical history. He performed the first human heart transplant at the Grootte Schuur hospital in Capetown in South Africa on December 03, 1967. At that time, operations on heart were rarely performed because of risk of death. Heart transplant was unheard of and was unthinkable at that time. He took the heart of a 25-year-old female accident victim, Denise Darvall and transplanted it to a 55 years old South African dentist named Louis Washkansky, who was suffering from fatal heart disease.

"On Saturday, I was a surgeon in South Africa, very little known. On Monday I was world renowned". Dr Barnard said after the first transplant. Asked to describe his feelings after the first transplant, Dr Barnard said, "Not very much. It was natural progression of open heart surgery. We did not think it was great event and there was no special feeling. I was happy when I saw the heart is beating again. We didn't stand up or cheer or something like that. I

didn't even inform the hospital authority that I was going to do the operation." Unfortunately the patient died 18 days later due to bilateral pneumonia.

3 days after the first transplant, the second human heart transplant using a human donor was performed on a child by Adrian Kantrowitz in Brooklyn, New York. The patient died within 24 hours due to rejection.

By 1971, 146 of the first 170 heart transplant patients had died, due to rejection of the new heart or infection. Most of the centres stopped transplant because of poor result. In 1974, the drug cyclosporin was discovered by Jean Borel from a poisonous Norwegian fungus, which helped to overcome body's rejection of the donor organs and protect the patient from infection. Subsequently heart transplants were more successful.

Currently heart transplantation is considered the gold standard therapy for end-stage heart failure refractory to medical treatment. Approximately 2500 heart transplants are performed yearly worldwide, but list of the candidates exceeds 50,000. Now-a-days having a heart transplant gives at

least 10 years of healthy life. For some people, it is much longer.

Gordon McDonald, is the UK's longest surviving heart transplant patient. Another recipient Donald Arthur of New York was suffering from cardiomyopathy (enlarged heart) and was on heart transplant waiting list for three years. He was advised by the doctors that if he did not get a heart transplant within six months, he would die. How ever he was lucky enough to receive the heart transplant after a month in the Columbia Presbyterian Hospital (Recently Bill Clinton had a Coronary Artery Bypass Surgery in the same hospital), N.Y. Fifteen months after the transplant, Donald competed in the first of five New York city marathon. Since then he has completed a total of six marathons. After six years of transplantation, he was honoured to carry the 2002 Salt Lake City Winter Games "Olympic torch" through the streets of N.Y.

In 1968 Australia's first human heart transplant was performed by Dr Windsor. Another Australian surgeon Dr Victor Peter Chang became worldwide news in 1984 because he developed the

most successful programme with an impressive survival rate of 92 per cent after one year and 85 per cent survival rate after five years. He was responsible for developing Australia's National Heart Transplant Programme.

In India, Maimoona Beevi was the first patient on whom a heart transplant was performed in 1994 by Dr P Venugopal at the All India Institute of Medical Science, New Delhi. After that, a pig heart was transplanted to human by another surgeon in 1996.

Since then less than 50 transplants were done in the entire country. The reasons for this number is lack of awareness among the public about organ donations, it results, benefits, social and religious stigma and financial burden.

Heart transplantation is now widely accepted option for end-stage heart failure and complex congenital heart diseases. However, the annual number of transplants worldwide has remained relatively constant because of the limited donor availability.

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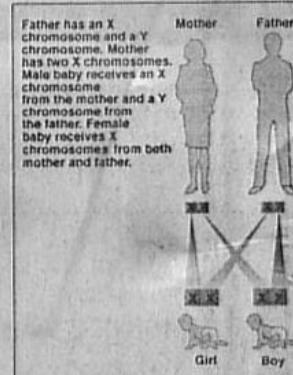
### DID YOU KNOW?

#### How your baby's sex is determined

Both a woman's egg cells and a man's sperm cells each contain 23 chromosomes, one of which is always a sex chromosome. Each egg cell always has an X (female) sex chromosome, while the sperm contains either an X or Y (male) chromosome.

An egg fertilised by a sperm containing an X chromosome will result in a girl, but when fertilised by a sperm containing Y chromosome it develops into a boy.

Many of us have not the correct idea about the fact and sometimes these people blame female who gives birth to a girl. But the real fact is that



-- husband is solely responsible for the sex of a child. In our country women bear the brunt of the lack of proper knowledge.

### HEALTH TIPS

#### Teenage smokers, did you know that --

If you are a young smoker and believe cigarettes are merely a product of teenage experimentation, you can consider these facts--

- Young smokers are 100 times more likely to become addicted to other substances, such as heroin and cocaine.
- Most teenage smokers are hooked by the time they turn 20 years old.
- Smoking makes you smell bad, gives you bad breath, makes your fingers turn yellow, and gives you premature wrinkles.
- Smoking can lead to a host of physical problems, including heart disease, stroke, and cancer.
- Experimenting with smoking can lead to a full-fledged addiction and a lifetime of trying to quit.
- Smoking leads you to impotency in your future life.



## Umbilical cord blood may help predict allergy risk

Blood from a baby's umbilical cord could help doctors predict which children will suffer from allergies and asthma later in their lives, British and American scientists said.

The researchers found that levels of allergy antibodies in the cord blood could be a more important indicator of allergy risk than exposure to allergens such as pollen, dust mites, etc.

"These findings support the importance of prenatal conditioning in the development of allergy later in life," said Dr Hasan Arshad, of the University Hospital of North Staffordshire, in research published in the international journal of respiratory medicine, Thorax. The scientists studied more than 1,300 children up to the age of

10 and monitored their allergies.

Children who had high levels of IgE, an immune system response indicating sensitisation to allergens in their umbilical cord blood, were twice as likely to develop an allergy and 66 percent more susceptible to asthma.

Arshad said the finding could have an effect on measures pregnant mothers could take to prevent allergies and asthma in their child. "Further research should be directed toward identifying these environmental influences that can affect the developing fetal immune system," he said.

Source: <http://www.reuters.com>

### GENE CURE HEALTH CARE LTD

## A different approach of health care in the country

TAREQ SALAHUDDIN

In this post genomic era molecular and cell biology have a great impact on modern medical therapy. Modern medical research and diagnostic approach are not possible without the knowledge of molecular and cell biology.

The necessity and role of molecular medicine

Molecular medicine encompasses the complete elucidation of disease process at the molecular level trying to discover biological approaches for diagnostic and therapeutic purposes. Molecular diagnostic approaches such as PCR, mutation analyses to help diagnostic specific infections, genetic diseases and cancer help to treat diseases. Immunopathology used for routine detection of cellular diagnostic and prognostic marker proteins in histo and cytopathology are vital.

Gene therapy is the procedure by which a damaged gene is replaced by a normal copy. Extraordinary things can be achieved by this procedure. Gene therapy can accomplish the treatment for many diseases for which there is no medical treatment. This form of treatment will be a big supplement for the conventional medical therapies. In many cases only genetic counselling can eradicate the disease.

Gene Cure Health Care Ltd Dr Khalid Bin Islam, Associate Professor in Molecular Medicine, Karolinska Institute (KI), Sweden he is the founder director of the Gene Therapy Centre (GTC) in Huddinge Hospital, KI. He has many contribution in the field of genetic research. He has more than 45 publications / abstracts in distinguished international journals. He performed first postdoctoral work on Human Genome supported by the Human Genome Project.

His wife Dr Tahmina Choudhury Islam is a pathologist, cell biologist and research scientist. She has been involved in the pioneering work with microarray technology at KI, Sweden. Dr Tahmina has gained her credibility by over more than 20 publications and abstracts in international journals.

This couple started a healthcare center at Kemal Ataturk Avenue, Banani, Dhaka named 'Gene Cure Health Care'. As they both are specialised in

molecular biotechnology they are trying to apply the molecular and cell biology in the diagnosis along with the conventional therapy. This is certainly innovative and a revolutionary approach in the existing medical therapy. They are very hopeful that they will go a long way with their current programmes and future plan.

Facilities available here and ongoing programmes

Presently integrated healthcare with advice, routine health profile check up and screening programme for early detection of cancer are provided at Gene Cure Health Care centre. They have

from weeks of illness causing loss of school attendance and elders incur financial losses.

Yet protection from these diseases can be achieved through vaccination of the family members and house staff. Gene Cure Health Care has a collaboration with GlaxoSmithKline, a leading vaccine producer. Gene Cure Health Care provides vaccines for Hepatitis A and Typhoid among other services.

Presently there are about 1500 members enlisted at the healthcare centre. Gene Cure Health Care performs their routine healthcare along with the vaccinations. They developed a software to maintain the database of the members. They remind the members 3-4 days before their vaccination schedule. Conventional treatment facilities are also available here.

As cancer is curable if detected early Gene Cure Health Care emphasises on the screening of cancer and they performs various diagnostic test of cancer markers.

Their other important work is genetic counselling. Dr Khali has already started genetic counselling to family members of carriers or patients with genetic diseases for prevention and awareness of the disease.

Future plan

They have a plan to expand the ongoing programmes and existing facilities of the centre.

Dr Khalid's vision is to introduce Molecular Medicine in our medical curriculum. He is ready to start collaborations with different medical departments of government and non-government institutes in Bangladesh. Already he has initiated work with BIRDEM in the field of HIV.

In a poor country like ours where we cannot expect the essential health care facilities, this sort of medical therapy seems to be irrelevant. But we need to change our motive and realise the need of molecular medicine for proper treatment. This facilities certainly do not met up the total demand of the country, but this is a starting and this starting is vital to make a revolutionary approach of molecular technology in our medical therapy. It can be a model for the people who want to do something better and innovative in the health care of our country.

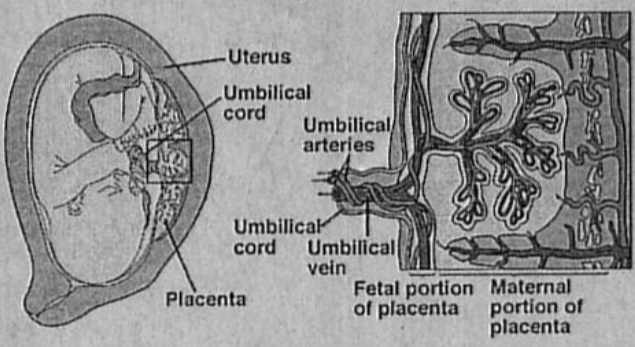
already started immunopathology, presently focusing on ER, PR staining for breast cancer and p16 immunostaining for cervical cancer screening. They are also concerned with delivering, promoting knowledge related to routine healthy lifestyle, nutritional values and protection with vaccinations.

We are often not aware that water-borne diseases are spread through contaminated food and water. Among many other diseases Hepatitis A and Typhoid are transmitted through handling, eating, drinking of contaminated food and impure water i.e. fecal-oral route. Affected people suffer

A day will come when a patient can walk into a lab, get his samples run in a microarray matched with proper controls to screen for a specific cancer or infectious disease.

- Dr Tahmina C Islam

### The Placenta and the Umbilical Cord



## Mobile fair helps cancer patients in Bangladesh

MANISHA GANGOPADHYAY

Half of all proceeds from ticket sales of the Grameen Phone sponsored Mobile Mela will go to Ahsania Mission Cancer Hospital commissioned to be built in Uttara.

In July of this year, Prime Minister Khaleda Zia laid down the foundation stone for the new 500-bed international standard hospital.

Tickets from the 5 day fair ending today, are being sold for taka 20. With over 30,000 tickets sold on the first two days alone, Ahsania Mission consultants are hopeful that they will receive several lakh taka for the 110 crore hospital project.

According to Ahsania Mission's literature, there are around one million cancer patients in Bangladesh and 200,000 are added to this number every year. Of these, a small number of affluent patients go abroad and collectively spend over 5000 million taka per year. Most cancer patients, however, have no options and face a long and painful journey towards eventual

death without any medical support.

The hospital, commissioned to be built over the next 3 years and finished in the year 2007 will be operated on the "No profit, No loss" theory. Income from general patients will be drawn to cover the costs for underprivileged cancer patients. About 30 percent of the hospital's facilities will be reserved for poor and needy patients.

Last August's Mobile Mela at Sonargoan Hotel produced taka 3 lakh in ticket sales. This time, the price of tickets has doubled and the venue at Argargoan's Bangladesh-China Friendship Center is substantially larger, allowing a greater number of visitors, which translates into a higher fundraising potential for both Grameen Shikha and Ahsania Mission hospital who will be splitting the revenues.

In addition to Grameen Phone's fundraising help, The Daily Star and Prothom Alo are providing various forms of support to Ahsania Mission Hospital, complementing the mobile service provider's efforts.

## WHO announces the theme of World Health Day 2005



"Make every mother and child count" is the slogan for World Health Day 2005, reflecting the need to make maternal and child health a higher priority.

In developing countries like ours, pregnancy and childbirth is one of the leading causes of death for women of reproductive age, and one child in 12 does not reach his or her fifth birthday.

## Pregnant women with asthma symptoms face risks

Women with moderate to severe symptoms of asthma during pregnancy are more likely to develop preeclampsia than women with no asthma symptoms.

The hallmarks of preeclampsia in pregnancy are high blood pressure and impaired kidney function, which can impair the health of both the mother and her baby.

"Our findings indicate that having a self-reported diagnosis of asthma does not increase the risk of preeclampsia; rather, it is having active asthma symptoms through pregnancy that increases the risk," Dr. Elizabeth W. Triche from Yale University School of Medicine in New Haven, Connecticut, and colleagues explain in the medical journal Obstetrics and Gynecology.

They followed 1708 pregnant women, of whom 656 had a diagnosis of asthma and 1052 did not. The team carefully accounted for asthma treatment and medication use, as well as other factors

such as obesity, age, and smoking early in pregnancy.

According to the researchers, neither overall asthma severity nor having physician-diagnosed asthma were related to the odds of developing preeclampsia. However, the frequency of asthma symptoms (wheeze, persistent cough, and chest tightness) during pregnancy was tied to preeclampsia risk.

Compared with women with no asthma symptoms, women with daily symptoms were three times more likely to develop preeclampsia.

"Taken together with previous findings that actively managed asthmatics have better outcomes than untreated asthmatics, our findings suggest that patients with asthma symptoms, with or without an asthma diagnosis, should be closely monitored during their pregnancies," Triche and colleagues conclude.

Source: Obstetrics and Gynecology, September 2004