NEWSLETTER OCT – DEC 2016

KULSUM International Hospital

KULSUM

- **Arrhythmia**
- **Machine of Rhythms – Pacemaker**

PATIENT SAFETY COMES FIRST

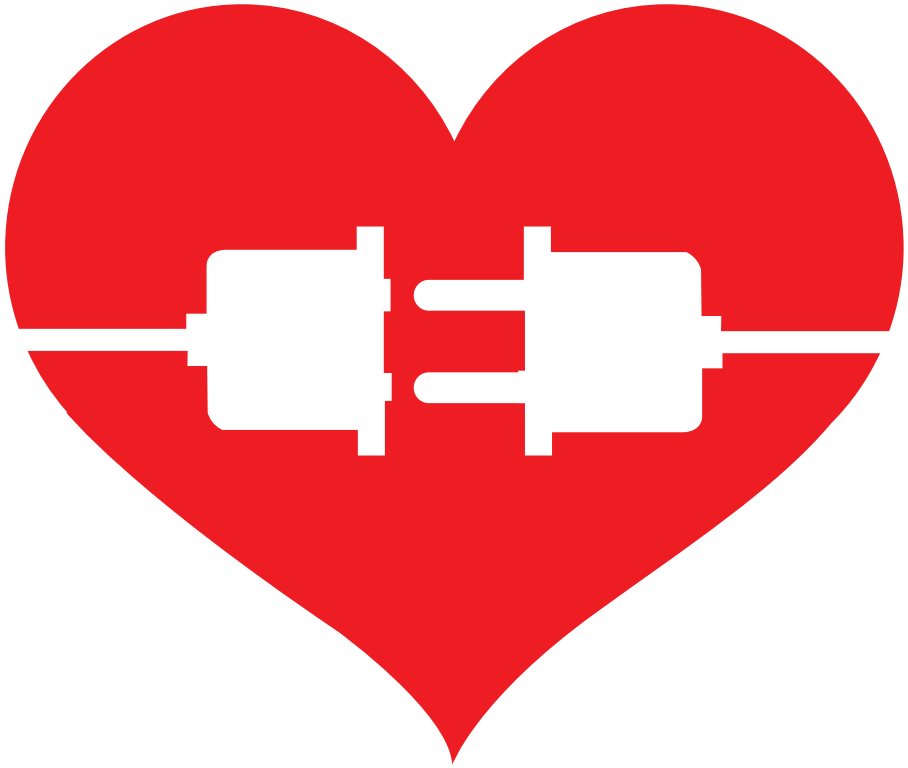
KULSUM International Hospital

KIH provides top of the line cardiology services

DON'T LOSE CONTROL OVER HEART BEATS

Cardiac Electrophysiology Department

KULSUM International Hospital



ARRHYTHMIA

DR. MAMOON QADIR
(INTERVENTIONAL AND ADVANCE PACING CARDIOLOGIST)

Heart is an integral part of our body which works in a coordinated way with other organs to supply blood to different organs which helps them in functioning appropriately. This is achieved via sophisticated and complex mechanism of electrical impulses generated in the heart. These electrical impulses are called heart rhythms. Problems of electrical system of heart is different from that of coronary blood supply and other treatments like angioplasty, valve replacements etc.

Heart rhythm disturbances are treatable in majority of the cases.

Normal heart rate is between 60 – 100 bpm. Slower than 60 are called “Bradycardia” and faster than 100 are called “Tachycardia.” They are diagnosed by ECG, holter monitors (long time ECG recorders), event recorders and implantable loop recorders. Common symptoms though variable from case to case generally are feeling fainting, palpitations, shortness of breath, dizziness, blackout or loss of consciousness.

Abnormal Heart Rhythms

Some common types of rhythm disturbances and its treatments are discussed below.

Sick Sinus Syndrome

Sick Sinus Syndrome is the name given to a number of different conditions where the sinus node (your heart's own pacemaker) doesn't work properly. This can cause sudden pauses in the heart rate, or make the heart rate become too fast or too slow. It can also cause the heart rate to alternate between a fast and slow rate known as "Tachybrady Syndrome". Sick sinus syndrome is most common in older people as the condition of the heart is affected by age. Sometimes, a heart attack or heart surgery or certain medicines, can also cause damage to the sinus node. The symptoms of sick sinus syndrome vary, and depend on how your heart rate is affected – for example, if your heart is beating too fast or too slow. You may only feel unwell for brief episodes but common symptoms include palpitations, dizziness and fainting (collapsing). If you have sick sinus syndrome, your cardiologist may recommend that you have a permanent pacemaker and you may need to take certain medicines.

Heart Block

It is a medical condition when there is a problem with the AV node and there is a delay or block in the electrical impulses travelling between the Atria (the top two chambers of the heart) and the ventricles (the bottom two chambers). There are many causes of heart block but it is commonly caused by ageing, which can cause scarring of the electrical pathway in the heart. It can also be caused by heart disease – such as coronary heart disease, myocarditis or cardiomyopathy – which damages the heart muscle, affecting the electrical pathway. Certain medicines can also cause heart block. In some rare cases, there may be congenital complete heart block where a person is born with the condition. Not everyone with heart block needs a pacemaker. It depends on how severe your heart block is, how slow your heart rate is, and whether you experience symptoms such as syncope (collapsing), dizziness or confusion. Most people can arrange beforehand with their doctor or cardiologist when they will have their pacemaker fitted. However, some people with heart block may develop slow heart rhythms which can be life-threatening and they may need to have a pacemaker fitted as an emergency. If this happens, you may be provided with temporary pacing to cover you until your permanent pacemaker is placed.

Atrial Fibrillation

Atrial fibrillation is an abnormal heart rhythm which originates in your atria (the top two chambers of the heart) and can sometimes be too fast or too slow. If it causes your heart to beat too slowly, you may need a pacemaker. Sometimes a pacemaker is used to treat atrial fibrillation which is causing the heart rate to be very slow and which could be causing symptoms such as feeling light-headed, faint or weak, or syncope (collapsing). If you have fast atrial fibrillation that cannot be kept under control with medicines, you may have a treatment called AV Node Ablation, which involves having a pacemaker inserted. First, the AV Node (the node between the atria and ventricles) is 'Ablated' (destroyed) by applying an electrical current directly to it, to try and control the heart rate more effectively.

A pacemaker can make sure your heart doesn't beat too slowly.

Cardio-inhibitory Syncope

In this condition patient collapses and temporarily loses consciousness. It happens when there is a pause of few seconds in the heart rhythm. Some people who have Cardio-Inhibitory Syncope may benefit from having a pacemaker implanted. If your doctor suspects that you have episodes of Cardio-Inhibitory Syncope, you may have a special test, called Tilt Table Test, to find out if a pacemaker will help you. The Tilt Table Test is specifically for the people who have had episodes of syncope (Fainting/loss of consciousness).

Heart Failure

Heart failure is a condition where your heart becomes less efficient/weak at pumping blood around your body. Heart failure may cause 'dyssynchrony' with LBBB on ECG which is when the ventricles (the bottom two chambers of the heart) don't pump in time with each other and which can cause symptoms of breathlessness and feeling very tired. If this happens, your Cardiologist may recommend that you have a special type of Pacemaker called Cardiac Resynchronisation Therapy (CRT) or Biventricular Pacemaker Implantation to improve pumping action of your heart.

LIFE THREATENING HEART RHYTHMS

Some patients with life threatening arrhythmias like Ventricular Tachycardia and Ventricular Fibrillation which mostly happens during or after cardiac arrest situation or in patients with severe heart failure, may be offered ICD and or CRT-D special advance pacemaker.

Some people who need a pacemaker and or at risk of developing dangerous abnormal heart rhythms can have an Implantable Cardioverter Defibrillator (ICD) fitted. An ICD can pace the heart in the same way that a pacemaker does, but it can also deliver controlled electrical shocks which can be lifesaving.

IMPLANTABLE LOOP RECORDER

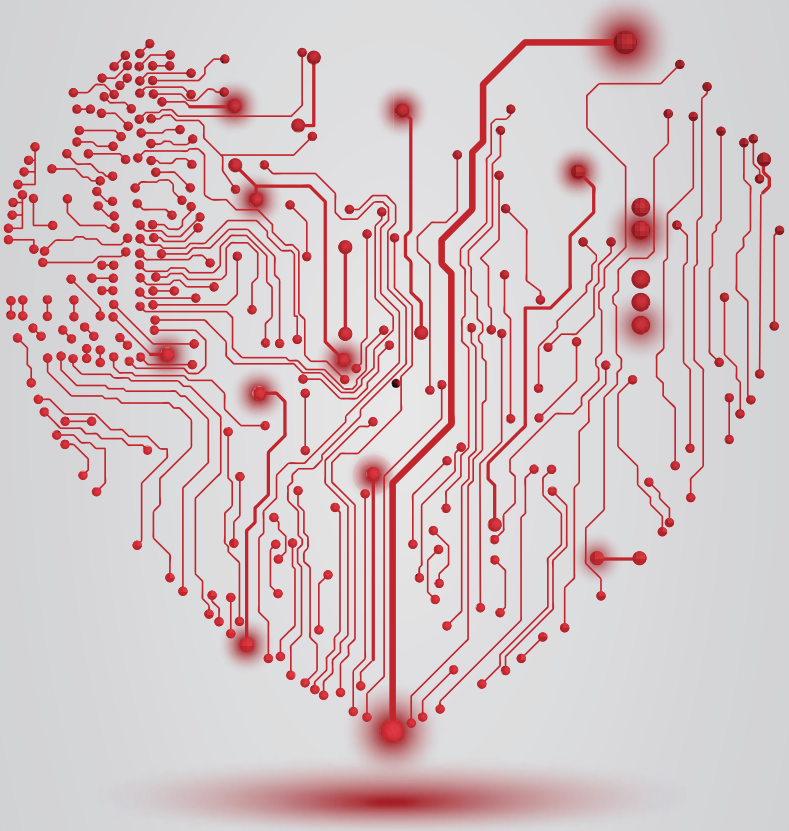
This small USB/ Flash drive size device is implanted under the skin near the heart to detect abnormal heart rhythm disturbance, in cases difficult to capture due to rarity of symptoms. Its data after the event is downloaded and reviewed for arrhythmia detection via specific external programmer. The device is removed after 2-3 years if no abnormality detected or early if arrhythmia is detected and treatment commenced.

ARRHYTHMIA CLINICS AT KIH

Our cardiologists at KIH are good at diagnosing heart rhythm disturbances. In addition, we have dedicated cardiologists with special training in advance pacing and electrophysiology. We discuss your problem in detail to reach to cost effective solutions.

We regularly implant variety of these devices and run arrhythmia and pacing clinics. Patient symptoms and heart rhythm issues are assessed in detail according to international guidelines. When required, further investigations are carried out to reach to definite diagnosis so that definitive treatment can be planned.

MACHINE OF RHYTHMS
PACEMAKER



DR. MAMOON QADIR
(INTERVENTIONAL AND ADVANCE PACING CARDIOLOGIST)

Human heart is a muscle about the size of fist and has a complex electrical system. It generates its own electricity, which causes it to contract and relax in the proper timing sequence, pumping blood to the body. For the heart to work correctly, the chambers must beat in a coordinated manner. Electrical signals can become blocked or irregular, causing the heart to beat too quickly (Tachycardia) or too slowly (Bradycardia).

Pacemakers are miniaturized computers that are usually implanted just underneath the skin in the chest area. A pacemaker monitors the heart's rate (how fast it beats) and rhythm (the pattern in which it beats) and provides electrical stimulation when the heart does not beat or beats too slowly or abnormally. To provide support, the pacemaker sends a tiny electrical pulse down a wire or wires into your heart, stimulating the heart to beat as and when required.

There are two key categories of pacemakers.

1. **BRADY PACING:** Simple pacemakers, single or dual chambers like VVI, DDDR etc.
2. **TACHY PACING:** Advance/complex pacing like Biventricular/CRT-P, CRT-D, ICD etc.

The pacemaker also stores information about the heart which can be retrieved by the cardiologist.This helps him to program the settings of the pacemaker to provide the best therapy for patient needs. Pacemakers can help people to enjoy longer, more productive, happier and healthier lives.

WHY PACEMAKER IS REQUIRED?

Doctor recommends having a pacemaker fitted because there are signs heart is beating either too fast or too slowly. Most permanent pacemakers (VVI, DDD, DDDR etc.) are designed to correct slow heart rates. If heart rate is abnormally slow, patient may have been experiencing weakness, tiredness, dizziness/ fainting or even loss of consciousness/blackout. A pacemaker can greatly help these symptoms. Cardiologist will discuss which type of pacemaker most suits the particular condition.

HOW DOES A PACEMAKER WORK?

Pacemaker contains a pulse generator and one, two or three electrode leads. These leads are thin pieces of insulated wire that deliver electrical impulses to and from the heart.

1. Pacemakers with one lead are called single-chamber pacemakers.
2. Pacemakers with two leads are called dual-chamber pacemakers.
3. Pacemakers with three leads are called bi-ventricular pacemakers.

The pacemaker box is made up of several different parts including the power supply (the battery) and the electronic circuit. It contains special software and memory so that it can monitor and store information about heart rhythm and heart rate. It also has a special circuit that allows the pacemaker to be checked and altered by a computer at the hospital.The pacemaker is contained within a protective metal casing. It weighs only about 20 to 50 grams (1 to 2 ounces) and is smaller than a matchbox.

Sometimes the pacemaker is combined with an ICD (Implantable Cardioverter Defilbillator) – a device, similar to a pacemaker that can treat fast, life-threatening heart- rhythm problems by delivering an electrical shock, if required.This device is a little bit bigger than a pacemaker and also slightly heavier.

Most pacemakers are powered by a lithium battery which usually lasts between six and ten years before it needs to be replaced.The battery life depends on how

hard the pacemaker has to work and how the pacemaker is programmed to work for a particular heart condition. Batteries are not rechargeable.The electrode leads conduct electrical impulses from the battery down into your heart. Each electrical impulse sent by the pacemaker stimulates the heart to contract and produce a heartbeat. The rate at which these electrical impulses are sent out is called the discharge rate.The pacemaker also monitors the electrical activity within your heart.

Most pacemakers are set to work on demand.This means that, if the pacemaker senses that your heart has missed any beats, or if it is beating too slowly, it will send out electrical impulses at a steady rate painlessly.

In a bi-ventricular pacemaker, one lead goes to the right atrium, one to the right ventricle and one to the left ventricle.This type of pacemaker is used in Cardiac Resynchronisation Therapy (CRT) for heart failure patients.

Some types of pacemakers can also speed up the rate at which your heart is paced when you are active or exercising. The pacemaker does this by using a special sensor that recognizes your body movements or breathing rate.

Pacemakers can also store and analyze information about natural heart rhythms. During follow-up appointments at pacemaker clinic, cardiac electro physiologist can retrieve this information and use it to check how well the heart and pacemaker is working. Some pacemakers can be followed up from patient's home, using special software or electrical connections installed in home. However, this is fairly new technology and is not yet available with most pacemakers.

HOW IS PACEMAKER IMPLANTED?

Some people have pacemaker implanted as a day case (which means that they don't need to stay in hospital overnight), while others have an overnight stay in hospital. Sometimes people may need to stay in hospital for a few days.The procedure usually takes about an hour but it can take longer for some people, particularly those who are having a bi-ventricular pacemaker. It is usually done with sedation and a local anesthetic, so patient will feel relaxed during the procedure.Your pacemaker will be inserted under very sterile conditions but you will be given some antibiotics before and after having the procedure. This is to reduce your risk of developing an infection. Most pacemakers are fitted by Transvenous Implantation (which is also called Endocardial Implantation). In a very small number of people, epicardial implantation may be used instead.You will be given pacemaker information leaflet and ID card which you need to carry all the time and contains important information about your device.

PACEMAKER CLINICS AT KIH

Our expert team of cardiac electrophysiologists and cardiologists with special training in the field are available to support the service and help program the device/trouble shoot according to patient's needs and improve longevity of battery.We keep patient records for future follow-ups and provide education material for further information about pacemakers and contact details.

VSD Closure

CONSULTANTS:
MAJ. GEN (R) DR. WAQAR AHMED, DR. FAREEDULLAH KHAN

HISTORY OF PRESENT ILLNESS

Male patient of age 18 was presented to the OPD complaining of breathlessness for the past two weeks. Cardiac history was positive for a Ventricular Septal Defect (VSD) from childhood followed by Pulmonary Hypertension. The patient had been asymptomatic since surgery with no complaints of chest pain.

- Over the last three months, patient had the problem of shortness of breath while unloading groceries, walking up stairs and other strenuous ADLs.
- Four days before presentation, he woke up at 2am with shortness of breath and had to sleep in his recliner the rest of the night. He had been unable to lay flat in bed at night with 3 pillows.
- Day before presentation, he became breathless walking up from one room to another. He denied chest pain.

PAST MEDICAL HISTORY

Patient was on oral medication with VSD since childhood. Patient was admitted with history of fever and shortness of breathing for 15 days. Patient had a history of cardiac catheterization and was discharged with oral medication and cardiac surgery consultation.

Patient was again admitted for VSD closure. Patient developed Acute Kidney Injury (AKI). Consultation with nephrologist was made and surgery was postponed for two weeks due to acute kidney injuryand glomerular disease and protein was high in urine.

PHYSICAL EXAMINATION

- BP 110/60
- Pulse 76, regular
- Respiratory Rate 30 and labored
- Temp 99°F
- Ht: 5'4"
- Wt: 51.kg

ADMISSION (FOR THIS PARTICULAR CASE)

Patient was readmitted for elective VSD closure. Initial blood tests were sent to lab. Surgery took place afterwards.

SURGERY FINDINGS

- Tear in tricuspid valve, septal leaflet over the VSD with TR (sever).
- Large size hyperdynamic heart with large tense PA.
- Mal aligned VSD with aortic over riding &PFO.
- Mild PR not amenable to repair.

PROCEDURE

- VSD closed using Dacron patch.
- Tricuspid valve repair using DeVega Suture.
- Pulmonary Ateriotomy was made.

ICU STAY

Patient was ventilated for four days in ICU. During four days stay, patient developed facial fits which was tonic colonic. Consultation with neurologist was made with investigations of CT brain and EEG. Results were found normal. Patient shifted to the ward afterwards. Patient remained stable during ward stay and finally discharged after being fully recovered with home medication and follow-up teaching.

Testimonial by H.E Dr. Hasrul Sani Mujtabar (Malaysian High Commissioner to Pakistan)

This is my first experience with any hospital outside Malaysia. Doctors and staff at KIH are very qualified and competent especially in Cardiology. My Angioplasty was done in safe hands. KIH is centrally located and close to diplomatic enclave which makes its location strategically important. Everyone here made me feel very happy and my stay marvelous . I am no more ill and enjoying the view of Margalla Hills from my room. Nothing more one could expect from the hospital.

NEW CONSULTANTS

Maj. Gen. Prof. Dr. Maqbool Ahmed (Retd)

Renowned General and Laparoscopic Surgeon Dr. Maqbool Ahmed joins Kulsum International Hospital. He has served in Pakistan Army on senior ranks including Professor of Surgery - Army Medical College, Director General, General Surgery - Pakistan Army and Head of General Surgery - Military Hospital and Combined Military Hospital (Rawalpindi). He was also deputed on UN Pakistan Medical Mission to Somalia. He has extensive experience in General and Laparoscopic Surgery specifically Redo Surgery and complicated cases.Heart failure may cause 'dyssynchrony' with LBBB on ECG which is when the ventricles (the bottom two chambers of the heart) don't pump in time with each other, and which can cause symptoms of breathlessness and feeling very tired. If this happens, your Cardiologist may recommend that you have a special type of pacemaker called cardiac resynchronisation therapy (CRT) or Biventricular pacemaker implantation to improve pumping action of your heart.

Brig. Dr. Nadir Ali (R)

One of the well-known Hematologists of the region Dr. Nadir Ali joins Kulsum International Hospital. He completed his MBBS in 1983 from Liaquat National Hospital & Medical College – Karachi, MCPS (Hematology) in 1999 and Ph. D (Hematology) in 2009. He served Pakistan Army for more than 3 decades as a consultant Hematologist in different hospitals. His last two postings were at Armed Forces Institute of Pathology, Rawalpindi and Combined Military Hospital, Peshawar. Dr. Nadir's contribution towards academia is commendable. He has 46 national and international research papers on his credit with presentation in 18 national and international conferences. He is also a chapter writer of 3 text books. More than 71 trainees in Ph. D, M. Phil and FCPS are the beneficiaries of Dr. Nadir's teaching. Keeping in account his contribution towards hematology, he is selected as a life time member of Pakistan Society of Hematology.

Dr. Beena Mamoon

Dr. Beena Mamoon has joined Kulsum International Hospital as Consultant Psychiatrist. She has done MRCPsych (UK). She started her specialization from Khyber Medical Teaching Hospital, Peshawar, Pakistan. For advance training, she went to UK and has worked in various disciplines of psychiatry i.e. adult, old age, child and adolescent as well as drugs & alcohol addictions. She is Diplomat of Clinical Psychiatry from Ireland and did her clinical fellowship from UK. She is committed to develop Psychiatry Services at KIH.

HYPERTENSION
CAN DRIVE YOU TO DEATH

APPROXIMATELY 4 IN 10 ADULTS HAVE HIGH BLOOD PRESSURE, WHICH OFTEN GOES UNDIAGNOSED.

Combat Hypertension by:

- Eating a healthy diet
- Reducing salt content in the diet
- Increasing physical activity
- Maintaining a healthy weight

Hypertension leading risk factor for disease:

Number 1 cause of stroke and heart failure
Number 2 cause of heart attack
Number 2 cause of disease burden (after tobacco) in developing countries

KIH Cardiology Department is equipped with the latest state-of-the-art equipment. We have hand picked the best, most experienced and qualified cardiology team at KIH. Our cardiology department provides consultation services and a range of non-invasive and invasive diagnostic procedures. Facilities include general cardiology clinics, a modern Catheterization Lab and Coronary Care Unit.

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051-8446666 www.kih.com.pk