




Interventional Cardiology
at MIOT International

Expert. Comprehensive. *Together.*

MIOT Centre for
Interventional Cardiology
Complete, Advanced Cardiac Care



Dear friends,

Looking at the lives we lead today, I'm reminded of an old song, 'Stop the world and let me off...' It mirrors the despair at the incredible stress and tension under which we all function, day after day. Unfortunately, there are few easy ways of 'getting off' to regain our physical and mental equilibrium - unless we make a conscious effort ourselves.


Stress has a direct impact on the heart as it releases certain substances which affect the heart's functioning. It also changes blood constitution, increasing chances of clotting. Today, this is happening across ages - from students to anxious mothers to overworked adults, and as a result, Heart Disease has become the leading lifestyle disease in India. We must not forget that heart disease, which changes our lives overnight, is not limited to 'Heart Attack', but also includes defects in our valves & electrical circuits that we are largely unaware of.

The good news is that all heart disease develops slowly. The changes that it makes in every hidden corner can be picked up, prevented or corrected, with minimally invasive Interventional Cardiology, provided the procedures are done by trained specialists with the right facilities. At the state-of-the-art MIOT Centre for Interventional Cardiology, our team of experts, who specialise in every part of the heart, focus on giving patients foolproof and patient-friendly treatments, even in the most challenging of cases. This has seen our patients go home safely, quickly, with long term results - and without the trauma of open surgery.

Let us start the process by getting a complete heart check done right here at MIOT under our 'Get a Status Update on Your Heart' initiative. If there are no red flags, all you need to do is follow a heart healthy lifestyle, as advised. If there are any issues, you can consult with our expert specialists. Together they will ensure that you have the latest and best possible care - so that there is minimal interruption in your plans for life.

Wishing you the best in all matters of the heart!

Warm regards,



Mallika Mohandas

Chairman, MIOT International



Interventional Cardiology

Removing Trauma from Cardiac Care



Interventional Cardiology, the **preferred mode of heart care** across the world today, uses minimally invasive procedures to diagnose and treat all types of conditions that affect the heart and prevent it from functioning optimally.

Interventional Cardiologists use thin tubes called 'catheters' to access the heart and assess it. They then treat disease and protect against further damage using a range of stents and

devices, or replace invasive procedures with the latest drugs. Often, diagnosis and treatment is done at the same time.

The benefits to the patient, aside from a significant reduction in overall cost, include **decreased pain, less risk of infection, smaller scars and shorter post-operative recovery time** as against open heart surgery.



MIOT Centre for Interventional Cardiology

The Complete Suite for Advanced Cardiac Care



Your heart pumps about **7200 litres** of life-sustaining blood everyday - an amazing collaboration of muscles, valves, electrical circuits and blood vessels. Much like the famed, multifunctional Swiss Army Knife, each part has a specific role to play. It is a system so intricate that when something goes wrong with one part, it can have a domino effect on your entire system.

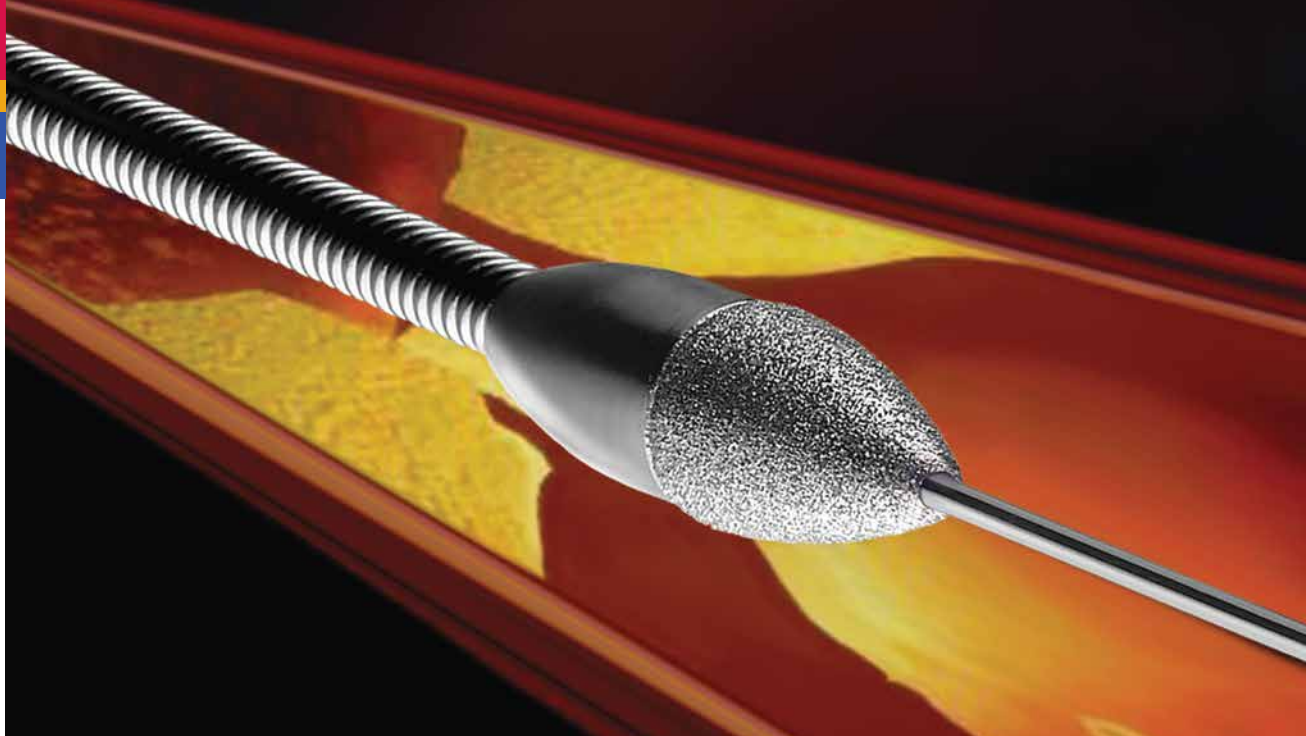
While timeliness is critical in treating heart disease it is equally important to treat completely and accurately. This calls for Knowledge, Experience and Expertise. And the **latest modalities** to diagnose and treat - in one centre.

Inspired by the Swiss Army Knife, this is exactly what we offer patients at the **MIOT Centre for Interventional Cardiology**. The centre has super specialists for every

type of heart condition: **Coronary Artery Disease, Valve Problems, Arrhythmia (irregular heartbeats) & Heart Failure**. They work as a seamless team, pooling experience and expertise garnered from leading international centres.

Our specialists treat heart disease at any stage, using advanced Interventional procedures that are offered at only a few centres in India. Their focus; **finding solutions that are patient-friendly, treat completely and protect the patient's long-term quality of life**.

Armed with cutting-edge tools & techniques, the latest devices & drugs, they intervene, prevent, diagnose and correct all types of cardiac conditions **without open surgery**. So that our patients go home safely, quickly & with minimal discomfort.



Rotablation, using a diamond-tipped drill, is an advanced procedure used for stubborn blocks & heavily calcified arteries.

Department of **Coronary Intervention**

The Department of Coronary Intervention deals with all conditions that affect the coronary arteries such as **blocks** and **calcification**. These can lead to **life-threatening heart attacks** and **permanent damage of the heart muscle** if not treated in time or correctly.

MIOT's Interventional specialists access these blocked or hardened blood vessels through the patient's wrist or groin, to make an accurate diagnosis through a Coronary Angiogram. Once the size and extent of the block has been determined, they can remove the blocks and restore blood flow with Medication, Angioplasty & Stenting, or Open Surgery.

Our specialists perform a number of **advanced interventional procedures such as:**

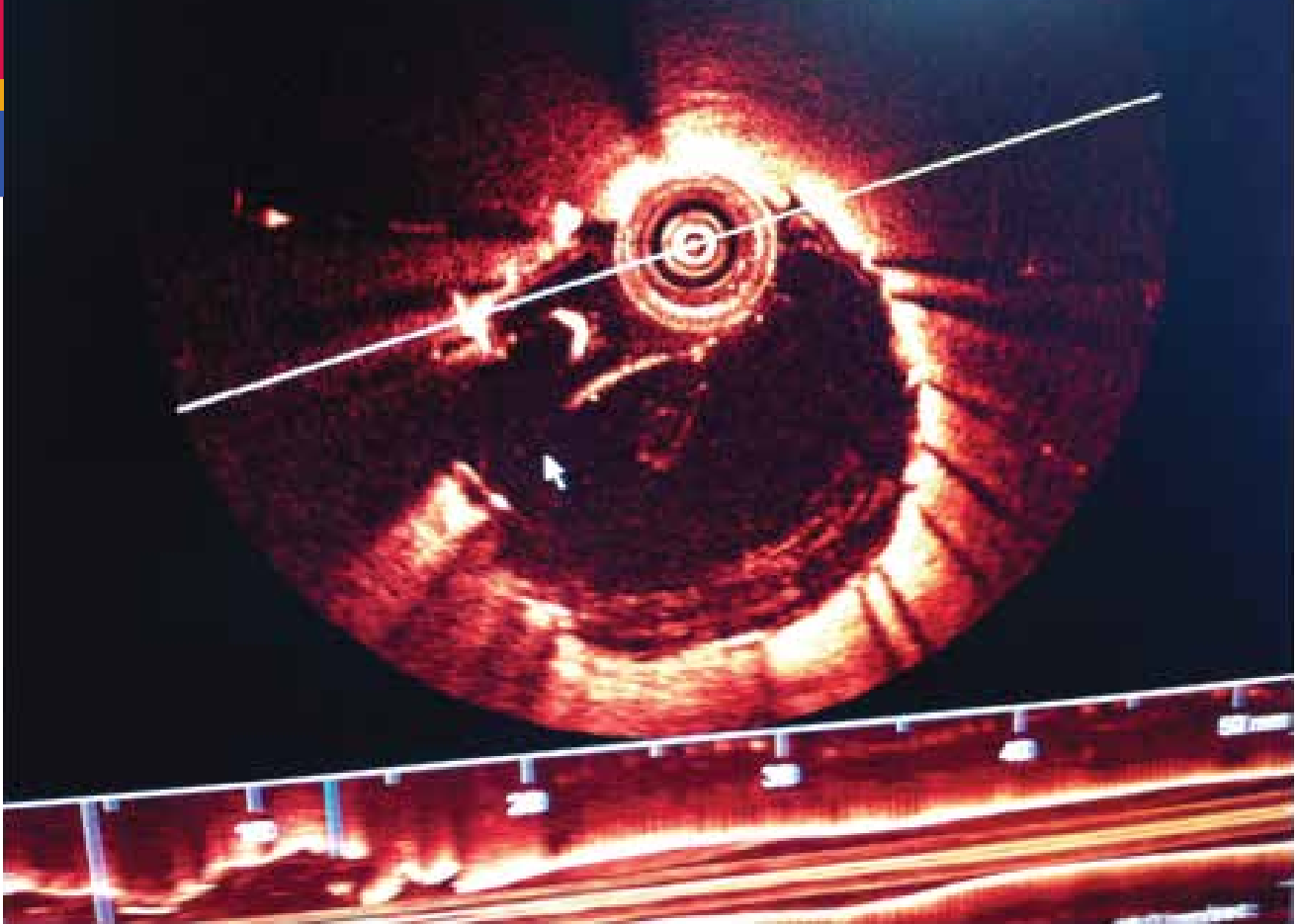
- *Rotablation* to clear the most stubborn blocks and widen heavily calcified arteries
- *Chronic Total Occlusion (CTO) Angioplasty* to open arteries that have been blocked for an extended period of time
- *Bifurcation Stenting* - at the junction of two arteries
- *Left Main Coronary Artery Stenting*
- *Vein Graft Stenting*



Department of **Heart Failure & Cardiac Transplantation**

Heart Failure is the term used when the pumping action of the heart is reduced. This can be either the left or right side of the heart, or both. It is most commonly caused by **Coronary Artery Disease**, but can also happen due to **Valvular Heart Disease**, infections caused by viruses or toxins (alcohol) and untreated hypertension.

Once the cause of the heart failure has been determined accurately, MIOT's Interventional Cardiologists perform advanced coronary interventions, valve repairs and replacement surgeries as required. In cases of **Acute Heart Failure**, our specialists implant devices to assist the pumping of blood (**Left Ventricular Assist Device**, **Intra-aortic Balloon Pump**) to aid recovery or as a bridge to a transplant. In **Chronic Heart Failure**, devices such as pacemakers to regulate heart rhythm (**Cardiac Resynchronisation**) can help. **Anti-heart failure medications** are also used effectively, along with lifestyle changes. Patients are monitored closely and regularly to adjust treatments, if necessary.



Optical Coherence Tomography (OCT) gives specialists high definition images of the inside of the arteries & aids accurate stenting in Angioplasty.

Foolproofing **Coronary Interventions**

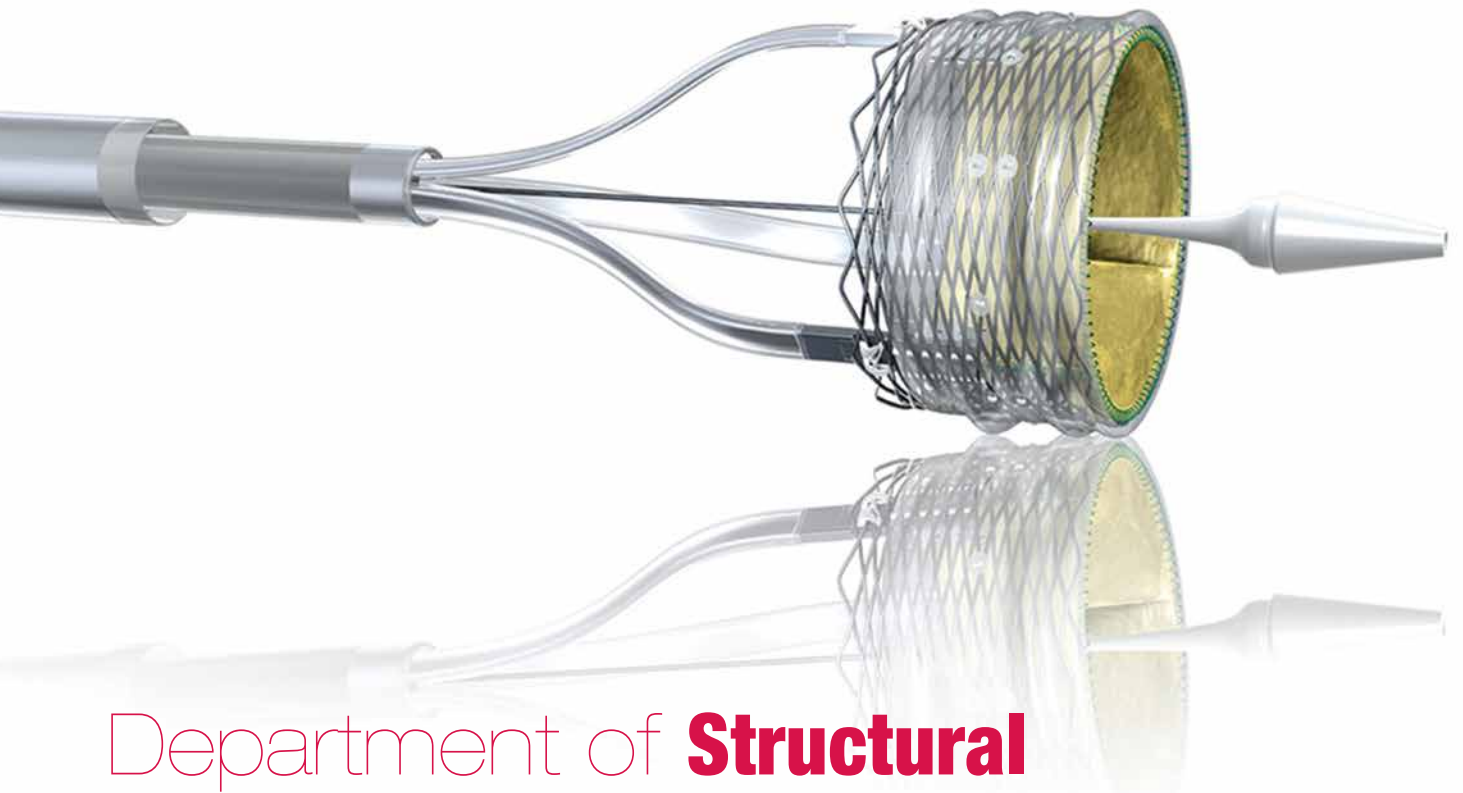


When an artery is blocked, the Interventional Cardiologist charts the treatment course depending on the location and the severity of the block. Normally, this decision is made based on the specialist's reading of the 2D images in a coronary angiogram.

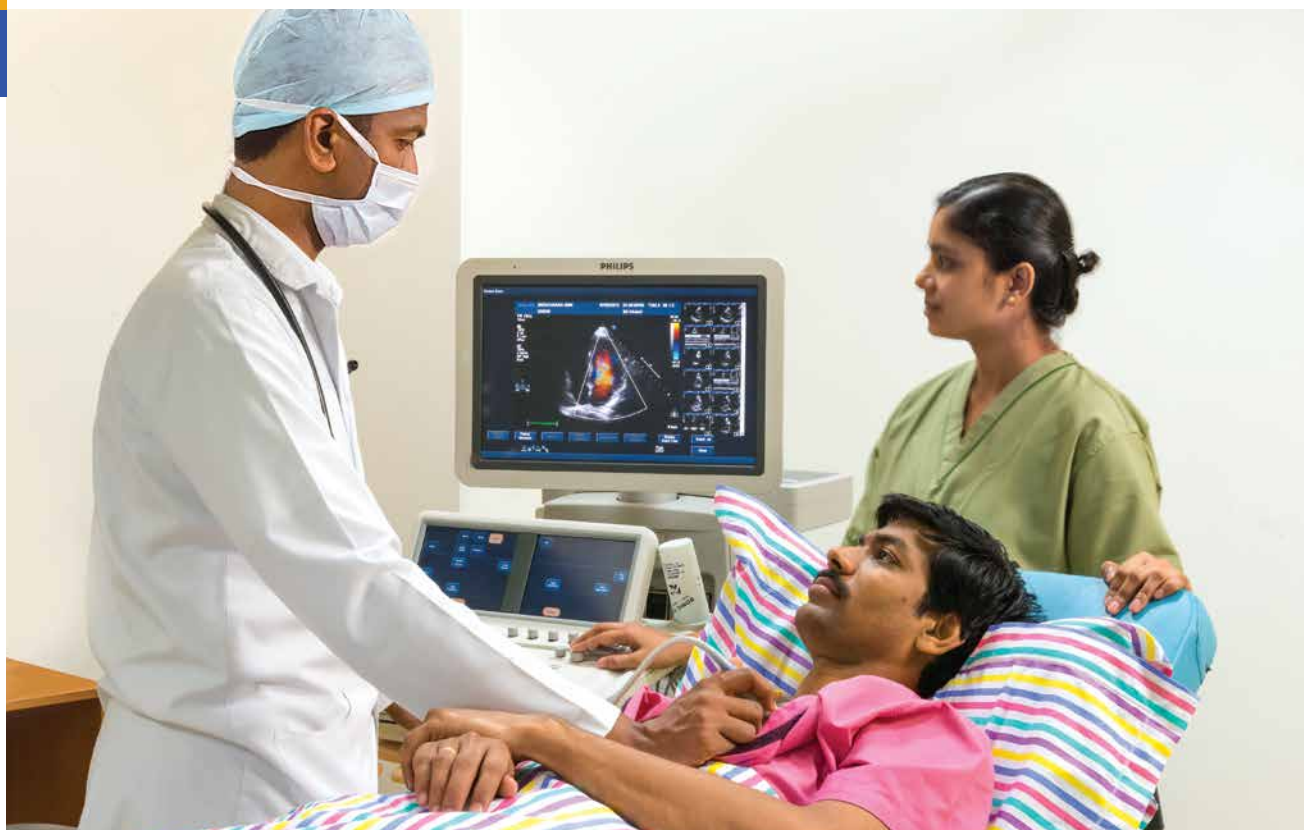
At MIOT, our specialists perform **sophisticated interventional procedures** along with the angiogram that leave no room for guesswork in the diagnosis and treatment of blocks in the heart. Thereby ensuring **long term results** for patients and **eliminating the need for repeat stenting**.

Fractional Flow Reserve (FFR) is a factual assessment procedure that measures the blood flow & pressure in the coronary artery. It gives our specialists the precise extent of the block, and helps to choose the best course of treatment, thereby improving long term outcomes.

Optical Coherence Tomography (OCT) gives specialists the view from the inside of the affected arteries with high resolution images. This is especially important in choosing the stent, and verifying size, fit & its placement, thereby ensuring better results.



Department of **Structural
Interventions & Percutaneous Valves**



The Department of Valve & Structural Interventions treats all diseases that affect the **Aortic, Mitral, Tricuspid or Pulmonary valves** through **keyhole** procedures, rather than traditional open heart surgery, with outcomes that match international standards.

Our dedicated specialists use the latest techniques and devices to remove obstructions, repair & replace faulty valves, and restore blood flow. These procedures can be done under local anaesthesia, even on patients who are considered high-risk for open surgery.

Among the more complicated treatments offered are:

- ***Transcatheter Aortic Valve Implantation (TAVI)***, which involves placing a new valve within the existing damaged aortic valve
- ***Balloon Valvuloplasty*** to improve blood flow through the aortic or mitral valve
- ***Mitral Clip*** to control leaks in the mitral valve
- ***Valve in Valve Therapy*** for patients with pre-implanted valves that are not functioning properly.





Department of Electrophysiology & Devices

The Department of Electrophysiology & Devices treats all types of **Arrhythmia**.

An Arrhythmia is an irregular or out-of-sync heartbeat that occurs when the electrical impulses to the heart, which coordinate heartbeats, don't work properly. The heart may beat too fast (tachycardia), too slowly (bradycardia), too early (premature contraction) or too irregularly (fibrillation). While most arrhythmias can be a nuisance, some can be serious or even life-threatening.

Our experienced Electrophysiology experts study every patient's arrhythmia in-depth in MIOT's **state-of-the-art Electrophysiology Lab**, to get to the source of the irregularity. They then work with other Interventional specialists to treat it with the latest techniques and devices.

Treatments offered at MIOT for Arrhythmia include **Cardiac Resynchronisation Therapy (CRT)**, implantation of **ICDs (Implantable Cardioverter Defibrillators)** and **Pacemakers**, as well as **Radiofrequency Ablation**.





Interventional Cardiology for Children at MIOT

The MIOT Centre for Children's Cardiac Care offers comprehensive heart care for children upto 14 years with congenital and rheumatic heart disease. Helmed by some of the country's leading Paediatric Cardiologists, and equipped with cutting-edge modalities, it is, today, a **global referral centre** for neonates, including babies born pre-term and underweight.

Our Paediatric Interventional Cardiologists have vast expertise in the full range of imaging and interventional procedures, including **device-closure of septal defects**, **stenting of great vessels** and **balloon dilation of valves**. It is the **only centre in India** that performs **Percutaneous Valve Replacements & Repairs**, and is one of the few centres in India that offers **Paediatric Electrophysiology** to track and treat arrhythmia in infants.



Symptoms & Risk Factors

All heart disease develops over time.
Therefore, it can be caught and treated early,
if we know what to watch out for.

Indicators for various Heart Diseases

Coronary Artery Disease

- Chest pain
- Shortness of breath
- Palpitations (irregular heartbeats)
- A faster heartbeat
- Weakness or dizziness
- Nausea
- Sweating

Heart Failure

- Shortness of breath
- Cough that produces white sputum
- Rapid weight gain
- Swelling in ankles, legs & abdomen
- Dizziness
- Fatigue & weakness
- Rapid or irregular heartbeats
- Nausea
- Chest pain

Valve Disease

- Shortness of breath and/or difficulty catching your breath
- Weakness or dizziness
- Discomfort in your chest
- Palpitations (irregular heartbeats)
- Swelling in ankles, legs and abdomen
- Rapid weight gain

Arrhythmias

- Palpitations (a feeling of skipped heartbeats, fluttering or "flip-flops" in your chest)
- Pounding in your chest
- Dizziness or feeling light-headed
- Fainting
- Shortness of breath
- Chest discomfort
- Weakness or fatigue (feeling very tired)

Major Risk Factors

- Smoking
- High cholesterol
- Uncontrolled hypertension (high blood pressure)
- Physical inactivity
- Being overweight or obese
- Uncontrolled diabetes
- Uncontrolled stress
- Having a family history of heart disease or sudden death for unexplained reasons

To Register for a complete Heart Screening for you or your loved ones at **MIOT Centre for Interventional Cardiology**, you can either Call: 044 4200 2288, Email: inv_cardiology@miothospitals.com or Visit us at: www.miotinternational.com



For MIOT 24×7 Cardiac Emergency Care Dial 10 57 10



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