Healthy Heart

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Price : ₹ 5/-

From the desk of Honorary Editor:

We, at Care Institute of Medical Sciences (CIMS), are passionate to improve Human health by imparting a healing touch through quality care and latest technologies in world of health care. We have a vision of creating a virtually Amputation free world, and our mission is to provide the finest quality of life to the patients by salvaging their limbs and extending their lives. We are proud to launch a Comprehensive Endovascular Department at CIMS Hospital with a team of endovascular specialists, surgeons, and interventional specialists, physio therapist , dietary department, diabetic foot care, first of it's kind in our part of the world in a single group of doctors.

Working together as a unified, patient centered team, our health care professionals specialize in minimally invasive endovascular surgery to repair peripheral vascular disease (PVD) a condition wherein the arteries that carry blood to the arm, legs, brain, kidneys, carotids or in fact any part of the body become narrowed or dilated, or even disturbances in veins including varicose veins, obstruction , fistulas etc., In this era, we are witnessing the upsurge of Heart Diseases, Diabetes and other concomitant clinical conditions by which the quality of life and abilities to function get compromised. Through CIMS Healthy Heart , we aim to make people aware of Peripheral Vascular Disease (PVD).

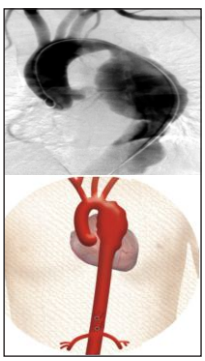
Due to various risk factors, PVD is highly prevalent the world over including India. As PVD affects various parts of human body it can cause stroke, pulmonary embolism, amputation, heart attack and death. This issue emphasizes various available treatment options for endovascular diseases.

CIMS Interventional Vascular Team have the expertise and experience in diagnosing and treating common, complex and rare vascular diseases to diagnose and treat any vascular condition. Feel free to call any of us listed below for your vascular patients.

- Dr. Keyur Parikh

CIMS Care for the Circulatory System

Thoracic Aortic Aneurysm (TAA)



Thoracic aortic aneurysm are a localized ballooning of the thoracic aorta, defined as at least a 50% increase in size compared to the normal aorta.

The larger the aneurysm at the time of diagnosis, the greater the chance for rupture. For this reason, it is very important to refer or treat large or unstable TAAs early to prevent rupture.

Risk Factors

- Advanced age
- Hypertension
- Hyperlipidemia
- Connective Tissue disorders
- Trauma
- Tobacco use
- Atherosclerosis
- Family History
- Syphilis

SYMPTOMS

Patients with TAAs are often asymptomatic. If symptoms develop, they can be diverse: pain in the jaw, neck, upper back, chest or shoulder; chest pain; and distal embolization are possibilities. In addition, coughing, hoarseness or difficulty in swallowing or breathing may occur.

DIAGNOSIS of TAA

Although TAAs often go unnoticed like Abdominal Aortic Aneurysm (AAA), they may appear in a routine chest X-ray and should be further evaluated by CT scan,

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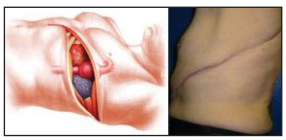
intravascular ultrasound, diagnostic angiogram or transesophageal echocardiogram.

Treatment of TAA

Medical Therapy is an option for stable, small TAAs. Yet, if enlarged or symptomatic, intervention is required. At present, there are two treatment options.

1. Open Surgical Repair-

Reimplantation of intercostal vessels and the interposition of a tube graft for descending thoracic aorta is done via a thoracotomy with left or right heart bypass. This procedure may also entail Hypothermic circulatory arrest . Although still a good option for certain patients, open surgical repair is associated with prolonged recovery and possible increased paraplegia risk.



2. TEVAR (Thoracic EndoVascular Aortic Repair)

A newer, less invasive approach utilizing thoracic endovascular aneurysm repair. This technique involves a small incision in the femoral artery for exposure and insertion of a catheter-based device to deploy a stent graft. TEVAR in appropriate patients can significantly reduce recovery time, blood loss, paraplegia risk and wound complications.

PVD & STOMACH

Our abdomen has a number of organs which require proper blood supply for functioning. Various blood vessels branch out from the abdominal aorta and supply blood to abdominal walls and viscera.

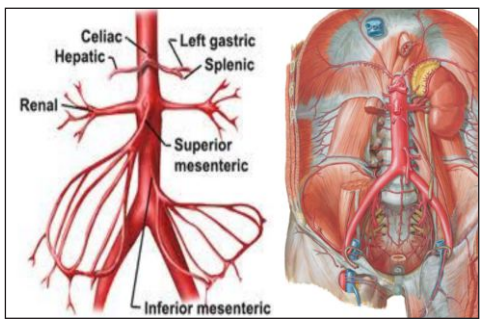
Some of the arteries (Blood vessels) may include:

1. Celiac artery – supplies to the stomach, liver and spleen

2. Superior mesenteric artery (SMA) – supplies 85% of the small intestine (except the superior portion of the duodenum) and some of the large intestine with blood

3. Inferior mesenteric artery (IMA) – supplies to all of the colon and rectum (except for the right half transverse colon)

4. Renal arteries – supplies blood to the kidneys, ureters and adrenals



When the arteries (Blood Vessels) supplying blood to the different parts of abdomen gets narrowed by the fatty deposit or plaque buildup (Atherosclerosis) the blood supply to the organs like small intestine, large intestine, liver, stomach, spleen and rectum, etc is reduced. This leads to visceral ischemia and visceral angina (pain in abdomen).

Risk Factors

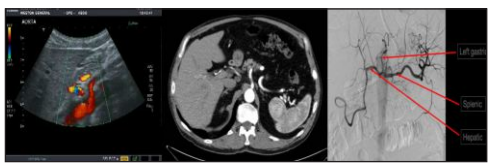
- Smoking
- High Cholesterol
- Diabetes
- Hypertension (high blood pressure)
- Family History of PVD, heart attack
- CABG (suggested or undergone)
- Coronary artery disease

Symptoms

- Severe pain in abdomen after food intake
- Loss of appetite with visceral pain
- Weight loss

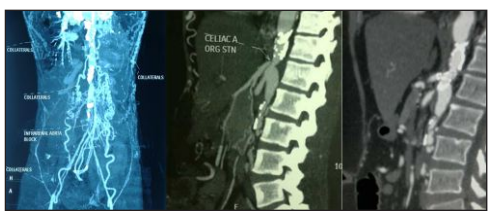
Diagnosis

The diagnosis of this disease is done with abdominal ultrasound imaging, CT scan and Angiography.



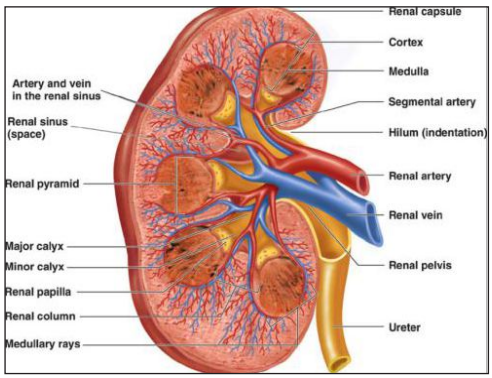
Treatment

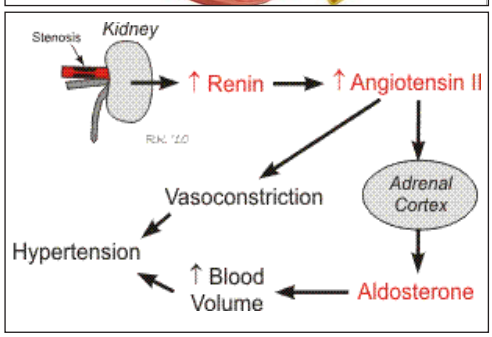
The treatment for this disease can be done through either surgical option or angioplasty like any other peripheral vascular disease. A call for a suitable option can be taken according to the clinical conditions.



PVD & YOUR KIDNEYS (RENAL ARTERY DISEASE)

Kidney (Renal) Artery Disease Linked to High Blood Pressure (Hypertension), Cardiovascular Disease



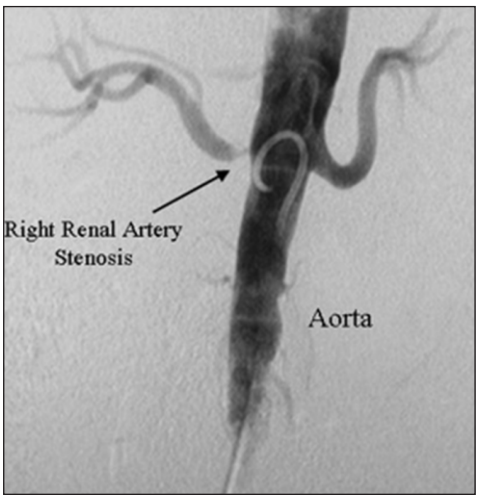


Kidney Artery Blockage (Renal Artery Stenosis =RAS) has been linked to cardiovascular disease and have demonstrated in 20-50 % of patients with peripheral vascular disease (PVD) & up to 5 % of people with high blood pressure.

Renal artery stenosis is most frequently caused by plaque buildup that reduces blood flow through one or both of the arteries, delivering blood to the kidneys.

When blood pressure is low, the kidneys release a hormone (Renin), which works with another hormone (Angiotensin II) to constrict blood vessels and raise blood pressure. Renal artery stenosis reduces blood flow and kidneys perceives that the body is experiencing Low Blood Pressure, So they pump Renin to compensate. . This physiologic misunderstanding results in sustained and difficult to treat hypertension.

If untreated, over time, RAS leads to progressive loss of renal function (known as ischemic nephropathy) as well as kidney failure in nearly half of RAS patients. For unknown reasons, renal artery disease in women can worsen twice as compared to men. Finally, RAS induced reduced kidney function can cause fluid and chemical imbalances that contribute to Cardiovascular Disease (CVD). In one study, people with RAS demonstrated significantly greater prevalence of CVD symptoms (including angina, previous myocardial infarction, and major electrocardiographic abnormalities) than their healthy counterparts. In many cases, renal artery



disease is asymptomatic (without symptoms). Some patients will experience one or more of the following symptoms:

- High blood pressure that is not controlled by medications and/or lifestyle changes
- Episodes of fluid retention
- Congestive heart failure
- Kidney failure, as evidenced by weakness, shortness of breath and fatigue

Treating Renal Artery Stenosis (RAS) :

RAS treatment objectives are three-fold: Lower blood pressure, prevent further kidney damage, and address co-morbidities (such as CVD) caused or exacerbated by RAS.

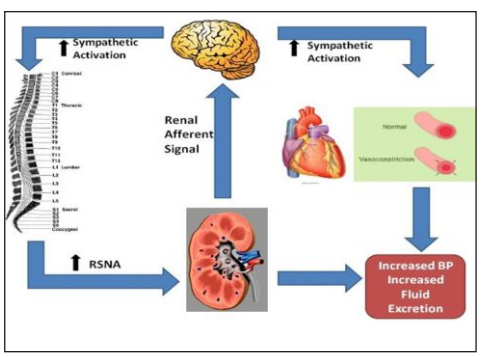
For patients with less serious renal disease and symptoms, several non-interventional (non-catheter-based) treatments can be helpful, including:

- Lifestyle changes such as weight loss, quitting smoking, exercise and a low-salt, low-fat diet
- Medication to lower blood pressure: Some RAS patients will require multiple hypertension medications and in some patients, medication will have little or no effect.
- Medication to treat other cardiovascular risk factors (e.g., high cholesterol, diabetes)

RAS patients with significant narrowing of the renal arteries and/or severe RAS symptoms may require angioplasty procedures using medical balloon and stent to open arteries and restore blood flow, as in peripheral, vascular and coronary artery diseases.

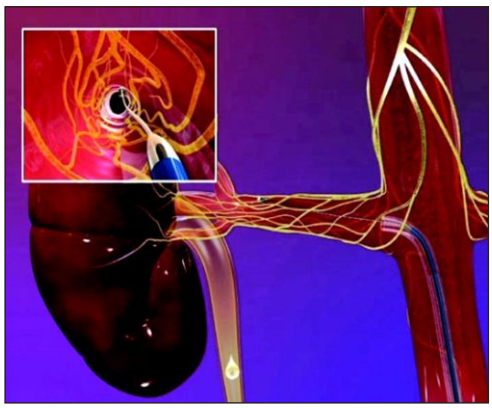
RENAL DENERVATION

What is the history behind RDN (Renal Denervation) therapy.



The Renal Denervation System

People with hypertension typically have



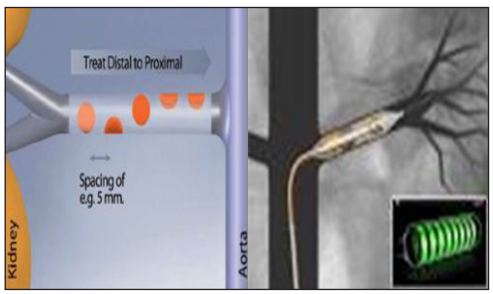
overactive renal (kidney) nerves, a condition that raises blood pressure and contributes to heart, kidney and blood vessel damage. The Renal Denervation System uses a technique called renal denervation (RDN) to selectively calm hyperactive renal nerves. This causes a reduction in the kidneys' production of hormones that raise blood pressure and may also protect the heart, kidneys and blood vessels from further damage. The Renal Denervation therapy offers several benefits including:

- Significant reduction in blood pressure
- Safe, short treatment that does not require general anaesthesia
- Fast recovery time with minimal complications
- Less invasive procedure

How does RDN work ?

The Renal Denervation System consists of a small steerable treatment catheter and an automatically controlled treatment delivery generator. Cardiologist makes a tiny incision within the two renal arteries. The energy delivered is about 8 watts, similar to that used to power a flashlight. This energy delivery disrupts the nerves and lower blood pressure over a period of months.

The Simplicity catheter delivers radio frequency waves to 4–6 locations in each of the two renal arteries, aiming to disrupt the nerves and lower BP. In this newly developed approach, a catheter connected to a radiofrequency generator



is introduced percutaneously to the lumen of the main renal artery via femoral access and used to disrupt renal nerves located in the adventitia of these arteries without affecting other abdominal, pelvic, or lower extremity innervations. This technique aims to ablate efferent sympathetic and sensory afferent fibers of the renal nerves, both of which are thought to contribute to the blood pressure-lowering effect of catheter-based renal denervation.

Advantages of RDN

This technique has some significant advantages over the radical sympathectomy performed prior to the advent of anti-hypertensive drugs. These advantages potentially make it a viable therapeutic option for patients with

resistant hypertension and for patients with other diseases thought to be associated with hyperactive renal sympathetic and afferent activity, such as chronic kidney disease and congestive heart failure. These advantages include short procedural and recovery times, the use of a minimally invasive approach and the localization of the procedure to the kidney, thereby avoiding the systemic side-effects that have plagued patients in the past.

Overall, Renal Denervation has been shown to :

- Reduce systemic sympathetic activation
- Reduce congestion (fluid overload) and congestive heart failure
- Induce LVH regression & ventricular remodeling
- Improve renal function
- Decrease arterial stiffness
- Reduce arrhythmias
- Reduce hypertension
- Reduce glucose tolerance
- Reduce insulin resistance
- Improve obstructive sleep apnea

To be continued...

Courtesy

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- Debates
- Special Topics

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- Pharmacology & Therapeutics - 1 & 2
- Cardiology Guidelines
- Peripheral/ Endovascular /Diabetic Foot
- Stroke

TRACKS - DAY-2 (January 11, 2014)

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- Interactive ECGs/Arrhythmia
- Atrial Fibrillation/ Arrhythmia
- Plenary Lectures
- CIMSRE-Oration
- Structural / Congenital Heart Disease
- Heart Failure
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CARDIOVASCULAR THORACIC SURGERY (CVTS) TRACK

NEONATAL & PEDIATRIC CRITICAL CARE TRACK

CRITICAL CARE & PULMONARY TRACK

TOTAL KNEE REPLACEMENT (TKR) TRACK

TRACKS - DAY-3 (January 12, 2014)

CLINICAL CARDIOLOGY TRACK

CARDIOVASCULAR THORACIC SURGERY (CVTS) TRACK

NEONATAL & PEDIATRIC CRITICAL CARE TRACK

CRITICAL CARE & PULMONARY TRACK

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