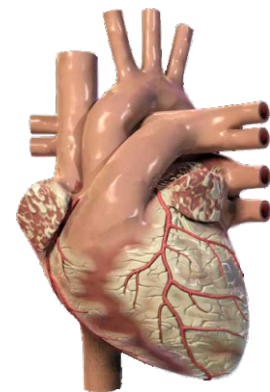


Healthy Heart



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 **CIMS**[®]
Care Institute of Medical Sciences

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From the desk of Editor:

Hypertension is a common occurrence in women during pregnancy. In this issue, I am elaborating the relationship as well as treatment for the same.

At CIMS we have a high risk Obstetric – Gynecology department run by some of the best obstetricians of Ahmedabad. We also do encourage more obstetrician to use the excellent facilities of CIMS Hospital for their patients. This is supported by an outstanding Neonatal unit (CIMS-KIDS)



Dr. Keyur Parikh

Pregnancy and Hypertension

Introduction

Hypertensive disorders of pregnancy are one of the three leading causes of maternal morbidity and mortality (together with hemorrhage and infection). The contribution of hypertension (high blood pressure) to mortality and morbidity of the foetus and newborn is also immense. Hypertension in pregnancy still results in some maternal deaths and can cause miscarriages, preterm deliveries and small for date babies due to placental problems. Mothers can be left with chronic hypertension and increased lifelong cardiovascular risk. Hypertensive disorders may complicate up to 10% of all pregnancies, with the highest proportion occurring in women who are pregnant for the first time.

Different types of Hypertension:

As recommended by The National High Blood Pressure Education Program Working Group on High Blood Pressure in Pregnancy hypertensive disorders are classified into 4 categories:

1) Chronic hypertension- Defined as blood pressure exceeding 140/90 mm Hg before pregnancy or before 20 weeks' gestation. It

can cause aggravated hypertension, superimposed preeclampsia and premature birth.

- 2) Gestational hypertension- or is a transient hypertension of pregnancy or chronic hypertension presenting after 20 weeks' gestation without significant proteinuria (Urinary protein excretion exceeds 300 mg/24 hours at anytime during gestation). It leads to pre eclampsia, restricted growth of foetus, placental abruption and premature delivery.
- 3) Pre-eclampsia- Hypertension presenting after 20 weeks' gestation with significant proteinuria, pre-eclampsia is a multi system disorder which can affect the placenta, kidney, liver, brain, and other organs of the mother. It can progress to eclampsia seizures.
- 4) Pre-eclampsia superimposed on chronic hypertension- Onset of new signs or symptoms of pre-eclampsia after 20 weeks' gestation in a woman with chronic hypertension. These women are at higher



risk for poor perinatal outcome and placental abruption.

Causes of Hypertension in Pregnancy:

The reason why pregnancy may cause high blood pressure or pre-eclampsia is not fully understood. In women who develop pre-eclampsia, it seems to have something to do with a problem with the placenta (the afterbirth), the attachment between baby and uterus (womb). It is thought that there are problems with the development of the blood vessels of the placenta in pre-eclampsia and/or also damage of the placenta. This affects the transfer of oxygen and nutrients to the baby. There are also certain women who seem to be at increased risk of developing pre-eclampsia.

Other causes include:

- Morning sickness
- Breech pregnancy
- Gestational diabetes
- Bladder Incontinence (Pregnancy)
- Women with migraine
- Separated Rectus Abdominal Muscles
- Constipation

Risk factors for hypertension in pregnancy include:

- A positive family history of inherited, cardiac disease
- Obesity
- Increased age
- Sedentary lifestyle (little to no exercise)
- Smoking or using tobacco products increases risk for a multitude of health problems, including heart disease
- High total cholesterol, and/or low HDL cholesterol
- Diabetes
- Systemic Lupus Erythematosus
- Chronic cardiopulmonary disease
- Renal disease
- Metabolic syndrome
- Increased C-reactive protein (CRP) levels
- Using birth control pills, especially if you are also a smoker
- History of prior pregnancy complications

Symptoms of Hypertension in pregnancy:

- Headache / Severe headache
- Fatigue
- Visual problems: blurred vision or flashing before the eyes
- Spots in vision
- General feeling of unwellness
- Sudden swelling of the face, hands or feet
- Yellowish eye & skin discoloration - due to liver damage
- Shortness of breath - due to lung damage
- Sudden weight increase
- Reduced urination
- Nausea
- Dizziness
- Severe epigastric pain
- Vomiting

Complications due to hypertension:

- Eclampsia- occurrence of one or more seizures in a woman with pre-eclampsia
- HELLP syndrome (Haemolysis, Elevated Liver enzymes and Low Platelets syndrome) is a severe form of pre-eclampsia
- Fetal death
- Low infant birth weight
- Blindness
- Ruptured liver
- Kidney failure
- Separation of placenta from uterus
- Maternal brain damage
- Convulsions
- Premature delivery
- Coma
- Maternal death

Preventive steps to avoid hypertension in pregnancy

- Maintaining healthy weight
- Regular exercise
- Reducing salt intake
- Drinking plenty of water
- Reduce Stress
- Avoid too much caffeine



- Regular prenatal appointments
- Adequate rest
- Healthy diet
- Controlled cholesterol levels
- Reduce anxiety; Manage stress
- No smoking

Drugs used to treat hypertension during pregnancy

■ **Methyldopa - A Drug of First Choice**

It is safe with no evidence of adverse effects in mothers or babies including long term pediatric follow up.

■ **β- Blockers Useful in Late Pregnancy (Propranolol)**

When used for short periods (<6 weeks) during the third trimester, β-blockers are effective and well tolerated.

■ **Labetalol -- A Reasonable Alternative**

The combined α and β-adrenoceptor blocker labetalol is a peripheral vasodilator which has been shown to be effective in pre-eclamptic and non-proteinuric hypertension in pregnancy.

■ **...But Avoid Atenolol**

It results in significantly lower birth weights compared with other antihypertensive agents.

■ **Calcium Antagonists - Nifedipine**

When administered in late pregnancy, oral calcium antagonist nifedipine is safe and reduces maternal blood pressure in pregnant women with mild to moderate hypertension, including those with pre-eclampsia, without apparent adverse fetal or perinatal effects.

■ **Hydralazine a Possibility**

Hydralazine has been widely used to control severe pre-eclampsia; however its adverse effects have limited its use for chronic hypertension in the second and third trimesters, besides being inferior to other agents.

■ **Avoid ACE Inhibitors...**

Administration of ACE inhibitors during the second and third trimesters can result in a number of fetal adverse effects, including growth retardation, renal failure, persistent patent ductus arteriosus,

respiratory distress syndrome, fetal hypotensive syndrome, and prepartum death thus contraindicated second and third trimesters.

■ **Diuretics**

They are rarely prescribed as antihypertensive agents during pregnancy because they reduce maternal plasma volume and can cause electrolyte disturbances.

Treatment of acute hypertension

The most commonly used therapies are labetalol (IV), hydralazine (IV), beta blockers (IV) and nifedipine (Oral). Use of magnesium sulphate for severe pre-eclampsia and eclampsia is now well established, though little is understood about its mode of action. Steroids should be given for 48 hours to accelerate lung maturation if gestation is < 34 weeks. Use of low molecular weight heparin in patients with a known coagulopathy or previous history of pre-eclampsia remains controversial.

Complementary or alternative treatment options for Hypertension of pregnancy

- *Close monitoring of blood pressure* - Severe cases may require induction of the birth or caesarean section
- *Antenatal care service* - Major purpose of antenatal care service is to make pregnant women aware of the dangerous symptoms of hypertensive disorders, to check their blood pressure at every antenatal visit, and to make a timely diagnosis of hypertension and refer affected women as early as possible.

Even though high blood pressure and related disorders can be serious, most women with high blood pressure during pregnancy (and those who develop preeclampsia) have successful pregnancies. Early diagnosis and early treatment are keys to treating hypertension during pregnancy. By catching it earlier, women can help to prevent the disease from becoming worse and from negatively affecting their pregnancy. Obtaining early and regular prenatal care is the most important thing women can do for their babies



CIMS Volcano S5 Intravascular Ultrasound (IVUS)

The Heart Care Clinic team was the one of the first in India to use colour VHS IVUS since 2007

Volcano S5 Intravascular machine to improve the quality of performance of PCI (Angioplasty, Stents etc.).

The system console, connected to a catheter via the patient interface module, gathers and displays high resolution intraluminal images that can be analyzed both qualitatively and quantitatively before & after angioplasty.

In addition to supplying diagnostic information, Volcano S5 can be an adjunct to interventional therapies, such as balloon angioplasty. In-Line Digital displays a two-dimensional, 360° rotation, longitudinal view of the vessel.



Intravascular Ultrasound (IVUS) is a catheter based system that allows physicians to acquire images of diseased vessels from inside the artery. IVUS provides detailed and accurate measurements of lumen and vessel size, plaque area and volume and location of key anatomical landmarks. IVUS technology helps differentiate the four plaque types: fibrous, fibro-fatty, necrotic core and dense calcium. It is routinely used at CIMS.

Clinical Applications

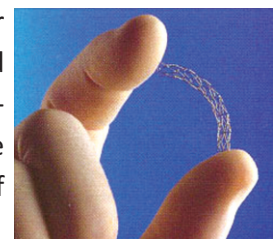
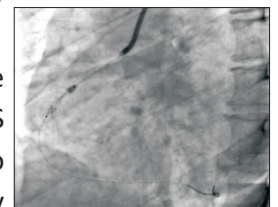
1. Assessing vessel wall morphology, lumen characteristics, and thrombus formation
2. Delineating arterial walls and wall thickness, especially before and after stent placement
3. Evaluating interventional vascular procedures
4. Measuring lumen diameter, vessel thickness, cross sectional areas and, with the In-Line Digital option, making longitudinal measurements

5. Providing additional diagnostic information as an adjunct to or in combination with interventional therapies such as balloon angioplasty or atherectomy
6. Combining ultrasound imaging with balloon angioplasty and stent placement
7. Generating a sagittal view of vessel for lesion diagnosis using In-Line Digital. In-Line Digital offers additional information for lesion diagnosis, longitudinal measurements, and other diagnostic and treatment options.



Using "VIRTUAL HISTOLOGY" (VH) (available on Eagle Eye Catheters)

- Traditional IVUS has improved the effectiveness of catheter based coronary therapies.
- The VH software enhances the current gray scale IVUS diagnostic approach to coronary artery disease by automating the vessel border boundary detection and providing the user with color-coded images that more precisely identify the type of plaque present.
- The VH IVUS system is intended to automatically visualize vessel boundary features and provide detailed assessment of lesion classifying and color-coding tissue composition.





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&
Institute of Behavioural Science
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(Full time)

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- Graduates in life science with minimum 50% score

For SC/ST/OBC category, minimum of 45% marks in aggregate is essential, as per GOI.

Note: Candidates appearing for their final examination of qualification are also eligible.

Admission Procedure :

- An entrance test / interview will be conducted for the selection of the candidates assessing overall reasoning and aptitude.
- The merit list will have 40% weightage for entrance test / interview + 60% of graduation marks.
- Selection will be followed by a counseling session.
- List of candidates selected/admitted will be displayed on the website and they will also be informed through email and phone calls.

For further information mail to: edu@cimshospital.org or visit: www.gfsu.edu.in



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**Over 3000 patients
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सर्वरोग परीक्षण शिविर : राजस्थान पत्रिका व सिम्स अस्पताल का प्रयास, हजारों लोगों ने उठाया लाभ स्वास्थ्य के लिए उमड़ी सूर्यनगरी

जोधपुर

jdhpur@patika.com

सूर्यनगरीवासी अपने स्वास्थ्य के प्रति बेहद जागरूक हैं। यही वजह है कि राजस्थान पत्रिका और केयर इंस्टीट्यूट ऑफ मेडिकल साइंसेज (सिम्स) की ओर से रविवार को कमला नेहरू नगर स्थित महेश पब्लिक स्कूल सोमानी कॉलेज कैम्प में आयोजित स्वास्थ्य मेले में हजारों शहरवासी उमड़ पड़े। बड़ी तादाद में पुरुषों, महिलाओं, बुजुर्गों और बच्चों ने अहमदाबाद के नामी डॉक्टरों से निःशुल्क परामर्श लिया और अपनी स्वास्थ्य जांच करवाई। इस सुपर स्पेशलिटी चिकित्सा शिविर में दिल के मरीजों को बड़ी राहत मिली। उन्होंने अहमदाबाद के हृदय रोग विशेषज्ञों से जांच करवा परामर्श लिया। रोगियों ने शिविर स्थल पर ही जांचे करवाईं। इसके अलावा कई माता-पिता अपने बच्चों को लेकर भी यहाँ पहुँचे। लम्बे समय से घुटनों के दर्द और स्लिप डिस्क की समस्या झेल रहे रोगियों ने भी यहाँ विशेषज्ञ चिकित्सकों के परामर्श और सलाह का लाभ लिया। करीब चार हजार लोगों ने इस शिविर का लाभ उठाया। इसके अलावा चिकित्सा संगोष्ठी में चिकित्सकों ने विभिन्न बीमारियों के अत्याधुनिक इलाज पर चर्चा की।



सेवा

राजस्थान पत्रिका और केयर इंस्टीट्यूट ऑफ मेडिकल साइंसेज (सिम्स) की ओर से रविवार को जोधपुर के कमला नेहरू नगर स्थित महेश पब्लिक स्कूल सोमानी कॉलेज कैम्प में आयोजित स्वास्थ्य मेले में जांच को उमड़ी भीड़ी।

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Resi. Address	<input type="text"/>
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