Hypertrophic obstructive cardiomyopathy (HOCM) has emerged as a less invasive treatment of symptomatic patients with hypertrophic obstructive cardiomyopathy (HOCM). In the past decade, the availability of this sophisticated technique has revived the interest of cardiologists in left ventricular outflow tract obstruction, which has led to the recognition that most patients with hypertrophic cardiomyopathy (HCM) have the obstructive type. Follow-up studies have already shown the safety and efficacy of the procedure, which offers symptomatic relief in most patients. Long-term survival is comparable to historical reports after surgical myectomy. Complications are rare and can be further reduced by an increase in the experience of the operators, while the theoretical concern for possible ventricular arrhythmogenicity caused by the myocardial scar has not been documented by the existing data. Although there are still no randomised trials, percutaneous septal ablation is a viable alternative for patients with HOCM. We have one of the largest series of such therapy in India (Table-4).

- Dr. Milan Chag
valve leaflet and leads to dynamic left ventricular outflow tract (LVOT) obstruction and mitral regurgitation due to malcoaptation of the mitral leaflets.

- Symptomatic status depends on left ventricular obstruction, diastolic dysfunction and myocardial ischaemia. The existence of significant obstruction at rest or after provocation is associated with symptomatic status and has significant prognostic implications. (Figure-3)

In such drug-refractory patients, alcohol septal ablation (Percutaneous Transluminal Septal Myocardial Ablation-PTSMA) (Figure-4) has come forward as a less invasive treatment than surgery to reduce LVOT obstruction by creating an infarction limited to the part of the septum, either basal or mid-cavitary, involved in the development of LV obstruction (Table-2).

**Table-2 : INDICATIONS FOR SEPTAL REDUCTION (PTSMA) TREATMENT:**

**CLINICAL INDICATION**
- Symptomatic patients
  - Drug-refractory or severe side effects of drugs
  - Functional class III and IV or functional class II with objective exercise limitations
  - Recurrent exercise-induced syncope
- Failure of prior myectomy or pacemaker
- Comorbidity-related increased surgical risk

**HAEMODYNAMIC INDICATION**
- Intracavitary gradient >30 mmHg at rest and/or
- Provocable gradient >60 mmHg

**MORPHOLOGIC INDICATION**
- Echocardiography
  - Subaortic, SAM-associated gradient
  - Mid-cavitary gradient
  - Exclusion of intrinsic mitral valve apparatus disorders
- Coronary angiography
  - Suitable septal branch

**MANAGEMENT:**
- In general, treatment of patients with hypertrophic cardiomyopathy aims at relieving symptoms, reducing the risk of sudden death and offering genetic counselling.
- Consequently, treatment of symptomatic patients with obstructive HCM (HOCM) aims at the reduction of the pressure gradient. Medical treatment with β-blockers, disopyramide or verapamil, however, fails to relieve symptoms in a substantial subset of patients.

Under local anesthesia and prophylactic transjugular temporary pacemaker lead insertion, first septal artery is identified and OTW

**PROCEDURE (PTSMA)**

- Surgical Myectomy
- Alcohol Ablation
balloon catheter of appropriate size is placed over the guide wire in the artery to occlude it completely. After confirming the target septal tissue by contrast echocardiography, 1 to 3 ml of absolute alcohol (1 ml/ 1 cm of IVS) is injected in target septal artery through central lumen of OTW balloon catheter under continuous ECG and hemodynamic monitoring. At the end, balloon catheter is removed, check angiogram is done and patient is monitored in CCU for 48 hours. (Figure-5, 6)

PATHOPHYSIOLOGICAL EFFECTS OF SEPTAL ABLATION:

- Injection of alcohol during alcohol ablation causes coagulative necrosis of the myocardium and the septal arteries.
- Tissue oedema appears early in this process, while muscle replacement

(Figure-6 : Procedure (PTSMA)

(Figure-7)

(Figure-8)

(Figure-9)

Ablation vs. Myectomy
5 comparison studies – 417 patients

<table>
<thead>
<tr>
<th></th>
<th>Myectomy</th>
<th>Ablation</th>
<th>Gradient reduction</th>
<th>Symptom Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>96</td>
<td>8</td>
<td>2.0</td>
<td>3.0</td>
</tr>
<tr>
<td>B</td>
<td>95</td>
<td>94</td>
<td>2.0</td>
<td>3.0</td>
</tr>
<tr>
<td>C</td>
<td>96</td>
<td>8</td>
<td>2.0</td>
<td>3.0</td>
</tr>
<tr>
<td>D</td>
<td>95</td>
<td>94</td>
<td>2.0</td>
<td>3.0</td>
</tr>
</tbody>
</table>

Ablation mortality: 1-2 %

Survival after Ablation
177 patients at Mayo Clinic

SCD: 1.4% per yr
by scar formation develops only after several days.

- Thinning of the ablated area and scar formation lead to a permanent and significant reduction of the obstruction and the associated mitral regurgitation within the next 3-12 months.

**CLINICAL RESULTS**

- Haemodynamic success with reduction in both resting and provokable gradients is accomplished in ≥ 90% of patients and is associated with significant improvement in symptoms (Figure-7, 8).
- Mean NYHA class decreased from 2.9 to 1.2 and mean CCS class decreased from 1.9 to 0.4 at 1-year follow-up. Exercise capacity also improved on a treadmill from 325.3 to 437.5 seconds. In a cohort of the first 100 consecutive patients treated the overall survival was 96% at 8 years, while 74% of patients remained free of severe symptoms, atrial fibrillation, and stroke or ICD implantation. Results of last 12 years are comparable to published literature (Table-3, Figure-9)

**CONCLUSION**

Alcohol septal ablation has emerged in the last 15 years as a less invasive alternative to the standard surgical treatment of symptomatic patients with HOCM. The accumulated long-term results have shown an ongoing relief of symptoms in the majority of patients. Hospital mortality can be practically eliminated in experienced centers, while the need for permanent pacing has also been reduced with increased experience.

### Table-3 : Comparison of Septal Myectomy and Percutaneous Alcohol Septal Ablation

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Percutaneous Alcohol Septal Ablation</th>
<th>Surgical Myectomy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Invasiveness</td>
<td>Percutaneous groin access</td>
<td>Sternotomy</td>
</tr>
<tr>
<td>Onset of reduction in LVOT gradient</td>
<td>Some decrease in gradient instantly, but 6-12 months for full effect</td>
<td>Instantaneous</td>
</tr>
<tr>
<td>Success rate (%)</td>
<td>&gt;80</td>
<td>&gt;95</td>
</tr>
<tr>
<td>Procedural mortality (%)</td>
<td>1-2</td>
<td>0-2</td>
</tr>
<tr>
<td>Recovery time</td>
<td>2-4 days</td>
<td>1 week</td>
</tr>
<tr>
<td>Effect on LVOT gradient</td>
<td>Decreases to &lt;25 mm Hg</td>
<td>Decreases to &lt;10 mm Hg</td>
</tr>
<tr>
<td>Postprocedure conduction abnormality</td>
<td>Right bundle branch block</td>
<td>Left bundle branch block</td>
</tr>
<tr>
<td>Need for permanent pacemaker-all patients (%)</td>
<td>5-10%</td>
<td>3-10</td>
</tr>
<tr>
<td>Need for permanent pacemaker if no preexisting conduction abnormalities (%)</td>
<td>5%</td>
<td>2%</td>
</tr>
<tr>
<td>Length of follow-up (year)</td>
<td>6-8</td>
<td>30-40</td>
</tr>
</tbody>
</table>

### Table-4 : Results

<table>
<thead>
<tr>
<th>STUDY</th>
<th>NO. OF PATIENTS</th>
<th>AGE (YEARS)</th>
<th>PACEMAKER IN-HOSPITAL (%)</th>
<th>MEN FOLLOW-UP TIME (YEARS)</th>
<th>IN-HOSPITAL MORTALITY (%)</th>
<th>LONG-TERM ALL-CAUSE MORTALITY (%)</th>
<th>REDO PROCEDURES (%)</th>
<th>MYECTOMY (%)</th>
<th>SURVIVAL WITHOUT SYMPTOMS</th>
<th>SURVIVAL</th>
</tr>
</thead>
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<tr>
<td>Seggewiss 2007</td>
<td>100</td>
<td>52.7±15.7</td>
<td>8</td>
<td>4.8±1.2</td>
<td>1</td>
<td>3</td>
<td>96%@8y</td>
<td>74 %</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Welge 2008</td>
<td>347</td>
<td>54±15</td>
<td>7</td>
<td>4.8±2.9</td>
<td>1</td>
<td>8</td>
<td>5</td>
<td>3</td>
<td>92%</td>
<td>74 %</td>
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<tr>
<td>Sorajja 2008</td>
<td>138</td>
<td>64±21</td>
<td>20</td>
<td>2.2±2.8</td>
<td>1.4</td>
<td>8</td>
<td>4</td>
<td>88%@4y</td>
<td>76.4 %</td>
<td></td>
</tr>
<tr>
<td>Kuhn 2008</td>
<td>329</td>
<td>58±15</td>
<td>17</td>
<td>2.1</td>
<td>1.8</td>
<td>7</td>
<td>13</td>
<td>91.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fernandes 2008</td>
<td>619</td>
<td>53.9±15.0</td>
<td>8.2</td>
<td>4.6±2.5</td>
<td>1</td>
<td>8</td>
<td>14</td>
<td>25</td>
<td>89%@8y</td>
<td></td>
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<tr>
<td>Kwon 2008</td>
<td>55</td>
<td>63±13</td>
<td>25.5</td>
<td>8±1</td>
<td>0</td>
<td>24</td>
<td>5.5</td>
<td>5</td>
<td>76%@10y</td>
<td></td>
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<tr>
<td>Noseworthy 2009</td>
<td>89</td>
<td>5.0±2.3</td>
<td>9</td>
<td>10</td>
<td>11</td>
<td>91%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ten Cate 2010</td>
<td>91</td>
<td>54±15</td>
<td>4</td>
<td>5.4±2.5</td>
<td>2</td>
<td>10</td>
<td>5</td>
<td>5</td>
<td>88%</td>
<td></td>
</tr>
<tr>
<td>Lyne 2010</td>
<td>12</td>
<td>69±22</td>
<td>0</td>
<td>11.75</td>
<td>0</td>
<td>3</td>
<td>17</td>
<td>0</td>
<td>73%@10y</td>
<td></td>
</tr>
<tr>
<td>Chag MC 2013</td>
<td>30</td>
<td>48±12</td>
<td>1/30</td>
<td>5.8</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>100 %</td>
<td>80 %</td>
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</table>
Due to an unprecedented response and over booking, registration fees for CIMSRE-CON 2014 will be non refundable after August 31, 2013.

CARDIOLOGY TRACK

- **Introduction Session**  
  Session Directors: Dr. Milan Chag / Dr. Keyur Parikh

- **Coronary Artery Disease / Acute Coronary Syndromes**  
  Session Directors: Dr. Milan Chag / Dr. Keyur Parikh

- **Plenary Lectures by International Speakers**  
  Session Directors: Dr. Milan Chag / Dr. Keyur Parikh

- **Hypertension / Lipids & Cardiovascular Risk Management**  
  Session Directors: Dr. Urmil Shah / Dr. Hemang Baxi

- **Medical Devices in Cardiology / Interventional Cardiology**  
  Session Directors: Dr. Keyur Parikh / Dr. Anish Chandarana

- **Debates**  
  Session Director: Dr. Anish Chandarana

- **Special Topics**  
  Session Director: Dr. Vineet Sankhla

**Satellite Sessions (Time : 8.00 pm - 10.00 pm)**

- **Pharmacology & Therapeutics - 1 & 2**  
  Session Directors: Dr. Milan Chag / Dr. Hemang Baxi

- **Cardiology Guidelines**  
  Session Directors: Dr. Urmil Shah / Dr. Satya Gupta

- **Peripheral/ Endovascular /Diabetic Foot**  
  Session Directors: Dr. Hemang Baxi / Dr. Srujal Shah

- **Stroke**  
  Session Directors: Dr. Anish Chandarana / Dr. Vineet Sankhla
# TRACKS - DAY-2 (January 11, 2014)

## CARDIOLOGY TRACK
- Interactive ECGs/Arrhythmia: Dr. Ajay Naik
- Atrial Fibrillation/Arrhythmia: Dr. Ajay Naik / Dr. Vineet Sankhla
- Plenary Lectures: Dr. Milan Chag / Dr. Keyur Parikh / Dr. Ajay Naik
- CIMSRE-Oration: Dr. Keyur Parikh / Dr. Milan Chag
- Congenital Heart Disease/Structural: Dr. Milan Chag / Dr. Satya Gupta
- Heart Failure: Dr. Ajay Naik / Dr. Urmil Shah
- Live Case Session: All Cardiologists

## CARDIOVASCULAR THORACIC SURGERY (CVTS) TRACK
- Dr. Dhiren Shah / Dr. Dhaval Naik / Dr. Srujal Shah

## NEONATAL & PEDIATRIC CRITICAL CARE TRACK
- Dr. Amit Chitaliya

## CRITICAL CARE & PULMONARY TRACK
- Dr. Bhagyesh Shah / Dr. Vipul Thakkar / Dr. Harshal Thaker / Dr. Dhanashri Atre Singh / Dr. Nitesh Shah / Dr. Amit Patel / Dr. Pranav Modi

## TOTAL KNEE REPLACEMENT (TKR) TRACK
- Dr. Hemang Ambani / Dr. Chirag Patel / Dr. Amir Sanghavi / Dr. Ateet Sharma

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# TRACKS - DAY-3 (January 12, 2014)

## SESSION DIRECTORS

### CLINICAL CARDIOLOGY TRACK

- "-----------------------------"

### CARDIOVASCULAR THORACIC SURGERY (CVTS) TRACK

- "-----------------------------"

### NEONATAL & PEDIATRIC CRITICAL CARE TRACK

- "-----------------------------"

### CRITICAL CARE & PULMONARY TRACK

- "-----------------------------"

### TOTAL KNEE REPLACEMENT (TKR) TRACK

- "-----------------------------"

### INTERNAL MEDICINE TRACK

- Dr. Milan Chag / Dr. Keyur Parikh

### TRAUMA CARE TRACK

- Dr. Sanjay Shah
CIMSRE-CON 2014 Registration Form

Cheque or DD’s to be made A/C payee and in the name of ‘CIMS Hospital Pvt. Ltd.’ Kindly mail the registration form along with the cheque/DD to our office. All Cash Payments are to be made at ‘CIMS Hospital, Ahmedabad' only.

<table>
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<tr>
<th>Module</th>
<th>Before 31-10-2013</th>
<th>Before 31-12-2013</th>
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<tr>
<td>Main Conference (January 10-12, 2014) (including certification course)</td>
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<td>₹ 7000</td>
<td>₹ 9000</td>
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<td>Certification Courses (January 11-12, 2014)</td>
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<td>₹ 3500</td>
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<tr>
<td>** Deposit for Hotel Accommodation (Separate cheque)</td>
<td>₹ 3500</td>
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<tr>
<td>For students doing MD (Medicine) with proof</td>
<td>₹ 3000</td>
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<tr>
<td>Spouse Hotel Registration (Non-refundable)</td>
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<tr>
<td>Foreign Delegates</td>
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<td>₹ 600</td>
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<tr>
<td>In case of cancellation</td>
<td>25 %</td>
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<td>100 %</td>
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** Hotel Accommodation is optional. If you have applied for accommodation, please send a separate deposit cheque of ₹ 3500 to cover the cost of your stay for two nights. Spouse hotel registration will be charged extra. Students also need to pay for Hotel Accommodation at the same rate.

Please note that it is mandatory to provide all the information. Please fill in all fields in CAPITAL LETTERS

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Payment Details

₹ in word: 

DD/Cheque No. Date Bank : 

CIMS Hospital, Nr. Shukan Mall, Off Science City Road, Sola, Ahmedabad-380060. Phone : +91-79-3010 1059 / 1060 Fax: +91-79-2771 2770 (M) +91-98250 66664, 98250 66668 Email : cimscon@cims.me, www.cimscon.com / www.cims.me