

# Wishes you and your family



and

a Prosperous New Year

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# Healthy Heart

Honorary Editor : Dr. Dhaval Naik



### From the Desk of Hon. Editor:

Coronary artery disease (CAD), also known as Ischemic heart disease (IHD), refers to a group of disease which includes stable angina, unstable angina, myocardial infarction and its complications, including sudden cardiac death. In 2015 CAD affected 110 million people and resulted in 8.9 million deaths it makes up 15.9% of all deaths making it the most common cause of death globally.

Mainstay of treatment of CAD are Lifestyle changes, Medical treatment – drugs (e.g., cholesterol lowering medications, beta-blockers, nitroglycerin, calcium channel blockers, etc.). Zoronary interventions as angioplasty - coronary stent and Coronary artery bypass grafting (CABG) surgery.

Being heart surgeons, we have acquired extraordinary skills to perform CABG surgery. Though, saphenous vein grafts and radial arteries have proven their efficacy in terms of patency, internal mammary artery (IMA) remains a gold standard conduit because of its vasodilatory nature. Certain studies have demonstrated a further survival benefit by using both internal mammary arteries in various techniques, particularly without touching aorta during surgery.

## Total Arterial Revascularization (CABG) using Bilateral Internal Mammary Artery (BIMA) – Evidence based practice

The survival benefit provided by a left internal mammary artery (LIMA) graft to the left anterior descending (LAD) artery has been acknowledged for several decades. Appropriately, the LIMA to LAD graft forms the backbone of modern day coronary artery surgery practice. Large observational studies have suggested a further survival benefit by grafting a second internal mammary artery (IMA) to the left coronary system. The recently published ESC/EACTS Guidelines for Coronary Artery Revascularization have recommended the use of a LIMA to the LAD and arterial grafts to the non-LAD system in patients with a reasonable life expectancy, with minimization of aortic manipulation where possible.

There are several compelling arguments for using both internal mammary arteries (BIMA) in coronary artery bypass surgery. These include a survival benefit, obtaining two



conduits from a single sternotomy therefore reducing morbidity from other harvest sites, and where

### **GUJARAT BEST BRAND AWARDS 2018**

It is an immense pleasure for all the CIMS family that we have received the "Brand Leadership Award" at Gujarat Best Brand Awards 2018'. This Award is dedicated to CIMS Family for their commitment and dedication and to all our patients for their unfailing trust in us.

#### **Continue Page 3**







possible, providing two inflows to the heart without having to perform a proximal aortic anastomosis.

Evidence for the efficacy of the use of bilateral, rather than single, mammary artery grafting comes from large observational studies. The Cleveland Clinic has published observational studies that have established the superiority of both single and later double internal mammary artery grafts over saphenous vein grafts. A Lancet metaanalysis from 2001 by Taggart and colleagues, including over 15,000 patients, demonstrated the survival benefits of bilateral mammary artery grafting over single mammary artery grafting as further evidence of the benefits offered by the use of more than one internal mammary artery. Since the publication of this metaanalysis there have been numerous institutional series demonstrating the

survival benefit of a second mammary arterial grafts. Patients >75 years had artery. The 1-year results of the randomized Arterial Revascularization Therapies Study (ARTS) have recently been published, and demonstrated similar safety between the use of single and bilateral IMA (other than a small increase in sternal wound dehiscence, which is described below). The medium and long-term data from this trial is eagerly awaited.

The rate of sternal dehiscence is increased with use of BIMA compared to a single IMA. The ARTS trial reported a 0.6% rate of sternal wound reconstruction for patients who have a single IMA harvested compared with 1.9% for those having BIMA, particularly with poorly controlled diabetes. Despite this, there was no difference in length of hospital stay or quality of life at 12 months.

better cardiac event-free survival when two arterial grafts (compared with only one) are used in one randomized trial, and another observational study. The use of BIMA grafts in the elderly means that more often than not, the entire procedure can be conducted via a sternotomy. sparing the legs and arms to facilitate more rapid mobilization and return to normal function by reducing extremity harvest site wound morbidity. Elderly patients often have sub-optimal venous conduit due to varicosities and calcification, which may be prone to early occlusion. The IMAs, in contrast, are often large with slightly thickened walls, facilitating easy harvest and manipulation during coronary bypass surgery. The use of vein grafts usually requires aortic inflow (although we do use IMA/vein composite grafts) and that must be obtained using some degree of aortic Elderly patients can benefit from manipulation. This exposes the

Table 1

Summary of large cohort studies comparing use of bilateral and single internal mammary artery grafts for coronary artery bypass surgery

Author Yea	Voar	N		Description	Age		Results	
	icai	BIMA	SIMA	Description	BIMA	SIMA	BIMA	SIMA
Taggart 2001 (3)	1989- 1999 (publica tion dates)	4,693	11,269	Meta-analysis of 7 (non-randomized) studies; each study at least 4 y follow-up			BIMA: HR death 0.81 (95% CI, 0.70-0.94)	



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Berrek Iouw 2001 (5)	1985- 1990	249	233	Retrospective, consecutive patients; excluded patients with reoperations, free IMAs, gastroepiploic artery grafts, combined procedures; mean follow-up 10 y	53.7±8	56.0±8.1	13 y ischaemic event-free survival 47.5% (±8.4%) HR 1.6 (95% CI, 1.3-2.3)	13 y ischemic event-free survival 35.4% (±5.1%)
Lytle 2004 (6)	1971- 1989	1,152	1,152	Retrospective, propensity score matched; primary isolated CABG, non-emergent patients; excluded patients with other arterial grafts; mean follow-up 16.5 y	57.5± 8.1	57.8±8.3	Survival BIMA: 7 y-89%; 10 y-81%; 15 y-67%; 20 y-50%; all BIMA vs. SIMA P<0.0001	Survival SIMA: 7 y-87%; 10 y-78%; 15 y-58%; 20 y-37%
Ruttman 2011 (7)	2001- 2010	277	724	Retrospective, consecutive patients; BIMA vs. LIMA/RA; primary, non-emergent CABG; excluded MI within 1 week; follow-up 57.7 months	56.6±9.6	59.9±7.9	MACCE 1.4%; RR 1.4%; MI 0.4%. Survival HR 0.23 (95% CI, 0.07-0.81)	MACCE 7.6%; RR 5.2%; MI 3.6%
Taggart 2010 (8)	2004- 2007	1,548	1,554	Multicenter RCT; included those considered for CABG with multi-vessel disease; excluded patients with evolving MI, single grafts, re-operations; follow-up 1 y	63.7±8.7	63.5±9.1	Mortality 1.2%. Sternal wound breakdown 1.9%	Mortality 1.2%. Sternal wound breakdown 0.6%
Grau 2012 (4)	1994- 2010	928	928	Retrospective, propensity score matched; included all patients undergoing isolated CABG; excluded single grafts, use of radial artery	60.9±9	62.1±9	Survival: 1 y-99%; 3 y-96%; 10 y-89%; 15 y-79%	Survival: 1 y-99%; 3 y-91%; 1 0 y-79%; 15 y-61%

patient to the inherent risk of atheroemboli and risk of iatrogenic type A dissection.

The coronary grafting strategy we have adopted is one of total arterial, no-aorta touch, off-pump surgery utilizing BIMA in the vast majority of patients. The use of bilateral in situ or composite graft IMAs has made this approach technically straightforward. The most important benefit of avoiding aortic manipulation is the significant improvement in the rate of stroke, 0.29% in a recent metaanalysis, to a rate that is comparable to that of PCI. Indeed, BIMA grafting, even when performed on-pump, has been shown to decrease the rate of stroke by decreasing the rate of aortic manipulation.

A second internal mammary artery, and indeed a second arterial graft, has been shown to provide a survival benefit and freedom from MACCE in

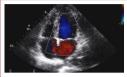
patients undergoing coronary artery bypass surgery. Using BIMA and total arterial grafting is potentially more time consuming and technically more difficult, but this is surely justified by improved patient outcomes.

Dr. Dhaval Naik

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# **ECHOCARDIOGRAPHY FELLOWSHIP 2019**



Sr. No	Month	Start Date	End Date
1	February	18-02-2019	23-02-2019
2	April	22-04-2019	27-04-2019
3	June-July	24-06-2019	29-07-2019
4	September	23-09-2019	28-09-2019
5	November	25-11-2019	30-11-2019



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# **CIMS Learning Centre**

Skills Development Centre

## MECHANICAL VENTILATOR WORKSHOP

November 18, 2018 (Sunday)

Course Directors       :       Dr. Vipul Thakkar / Dr. Bhagyesh Shah         Duration       :       1 day         Number of Seats       :       50         Venue       :       CIMS Auditorium	Respiratory Physiology-what ventilator does to body ?     Classification of mechanical ventilation – basic mode, type     of breaths, goals & indications     Initiation of mechanical ventilation & problems			
Programme Overview: Mechanical Ventilator support is a basic and key life-sustaining system while dealing with very sick patients in ICU. In general, this support is a marker of severity of critical lines. As with any science and technology, constant innovation and advances in the field of mechanical ventilator support are happening. In the current era of popularity and evidences avouring cardio-pulmonary supports like ECMO It is vial to learn, and	<ul> <li>Ventilation in different case scenario / disease specific ventilation</li> <li>Graphics in mechanical ventilation</li> <li>Trouble-shooting on mechanical ventilation: How do I deal</li> <li>ARDS Ventilation - mechanical ventilation and beyond</li> <li>Monitoring, care of mechanically ventilated patient</li> <li>Weaning from mechanical ventilation</li> <li>Tracheostomy - when: care &amp; complications</li> <li>Non-invasive ventilation</li> </ul>			

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