

Editorial

Art of Cardiovascular Sciences

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Cardiovascular science in the present scenario has almost become like an empire with multiple well defined special areas under one umbrella. Fetal medicine, Pediatric Cardiology, Rheumatic Heart Disease, Coronary Artery Disease, Cardiomyopathies, arrhythmias, Cardio-oncology, Cardio-Diabetology, its interactions with systemic disorders are the innumerable challenging areas [1]. Interventional technique, knowledge of new drugs and devices, hardwares along with its extension into radiological & nuclear imaging fields makes cardiovascular science a unique mesmerizing bouquet of flower of different colors.

To be very just, no one can be a master of all areas, so it is very wise to select any special area of interest so as to have a near full command over it. Pediatric cardiology and arrhythmias are quite challenging and require full passion and devotion to do justice to them and can't be carried as an attachment to Coronary Artery Disease (CAD).

Both ends of the spectrum should be held together to balance the advances and the basics. Both of them should be well knit together to make cardiovascular science a force to reckon with.

The routine practice of not recording a detailed history, hasty clinical examination or doing Echocardiographic study replacing auscultation is totally unjustified [2]. Plea that when Echo can reveal all details, why to waste time to auscultate is very objectionable. Little time being devoted to clinical examination & dynamic auscultation being almost obsolete is worrisome.

This is slowly and slowly killing the aura and beauty of cardiac sciences. Our clinical skills are dying surely. Protocol of history, clinical exam and then followed by investigations should not be bypassed. As 'C' stands for Cardiology, it also now represents Commercialization and Corruption, so the justification of revascularization should be very transparent and issue of reversible ischemia should be clearly decided by stress testing before proceeding for CABG or stenting taking the family members into confidence.

Optimization of medical treatment is very necessary and the most basic that should be done. Gradually increasing the dose of Beta blockers, ACE inhibitors or antiplatelets to the maximum optimizing dose of each class of drug for beneficial effects should be our aim on follow up visits [3].

Dedication of time to study the drug's side effects and dose

adjustment protocols will help the clinician to better assess the complaints of the patient. An adequate explanation of the anticipated drug effects, any possible side effects along with dietary and lifestyle changes should be the protocol of doctor-patient interaction. We should have an in-depth knowledge about the drugs that we prescribe to our patients.

RHD is still quite prevalent in pockets of India correlating with the socioeconomic status of the region. Lifelong morbidity, mortality, issue of anticoagulants, pregnancy, decision for valve replacement & penicillin prophylaxis are challenging facets of RHD [4]. Irregular availability of Penicillin and the controversial role of echo in the diagnosis of RHD/ Acute Rheumatic Fever is often problematic.

Congenital heart disease are underplayed in magnitude & most of the sick babies die in the initial few days or weeks of life, undetected and undiagnosed in the midst of broader diagnosis of septicemia & dehydration. Ironically, better developed states and centers show higher pickup of areas of CHD which is reflected as an increasing number of cases of CHD. Few trained pediatric cardiologists across the country are available in sparsely distributed centers of excellence.

Cardiomyopathies are the most challenging syndrome to diagnose & treat. In terms of advancement, it has octopus like appendages that stretch into multitude arenas, including genetics, varied presentations & etiologies. To diagnose and treat reversible causes should be the clinician's top priority which may require screening of family members, genetic testing & endomyocardial biopsy in a subset of patients.

Arrhythmia related disorders, Hypertensive Heart Disease, Cardio-oncology, Cardio-diabetology, Pericardial Diseases, Cardiac disorders in HIV & other systemic illnesses require special attention & expertise.

Center stage will obviously be occupied by CAD considering its epidemic proportions along with CAD affecting young, women or elderly patients which may need alteration in usual treatment plans and increased demands for interventional strategies that target judicious reperfusion [5].

Often the vascular system is ignored and relevant examination and history not undertaken which might miss diseases confined only to the vessels like Takayasu Arteritis and Aortic Dissection. Often suspicion alone may lead to directed investigations and newer imaging modalities pertaining to diseases of Vessels either inherited or iatrogenic.

In this Era of Investigations & Catheterizations we encounter increasing cases of iatrogenic diseases of Aorta apart from the known inherited causes.

Interventional field of Cardiology exposes the Doctor to the clinical expertise and art of handling the catheters and wires for diagnostic & therapeutic purposes. Knowledge of guidewires, balloons, catheters & stents is crucial for every interventional cardiologist. The better

& smart pacemakers, ICD, Prosthetic Valves along with working knowledge about these devices and hardware is also very important for successful intervention.

Noninvasive, Invasive & radiological/nuclear imaging are the wide spectrum in the armamentarium for the diagnosis & therapeutics in cardiovascular science.

Focus on timely treatment in ACS, Primary Angioplasty, Early CABG, Diagnosis & smooth transfer, Trained Paramedical Staff, In Ambulance Thrombolysis & round the clock availability of Staff & Cardiologist is very essential to increase the Success of Primary Angioplasty which is at a very dismal state in India. Thrombolytics are to remain for a long time and Streptokinase still considered a friend indeed of poor patients for quite a time [6].

Clinicians are often called to provide their opinion on systemic illnesses that feature neurological, pulmonary, renal or any other systemic involvement so basic knowledge of these systems is a must. Prioritization of Public health, Government Policies, cheaper drugs, decreasing costs of Interventions & increasing the number of Cardiologists along with maintaining their Training Programs are the basic steps to tackle the growing number of cardiac patients in epidemic proportions in India. Creating our own registries & not blindly following western data is the need of today's time. Uniform availability of Tertiary Cardiac Services throughout the Country is the basic criteria for ensuring better treatment of sick patients in time.

Beyond all complexities, cardiovascular science shares the dynamics with the science of physics in aspects like force, hemodynamics, flow velocity and pressure gradients which originate from heart and reflects upto the distal vessels.

Although simple in terms of conceptualization and understanding the mechanisms of the processes and pathophysiology, the demands

and challenges of rising epidemic of CAD, Refractory CHF with the need of Heart Transplantation, RHD, Complex CHD in 1st year of life and other cardiovascular diseases in Indian Population are largely unmet. Poor fund allocation as well as scarcity of capable tertiary centers make the feat difficult to accomplish but the challenges revive the determination to fight back with vigor.

Future lies in Genetics & its role in better understanding of Cardiac Problems. Newer advances in drugs especially antiplatelets as well as advances in early diagnosis of Congenital Heart Diseases, Cardiomyopathies & Aortopathies coupled with much evolved newer drugs, better stents and devices, advanced Cardiothoracic & vascular surgeries, timely prevention and adequate awareness will definitely help to subdue the dinosaur of Cardiovascular Diseases [7].

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