

## **EDITORIAL VIEW**

# **Prepare today for tomorrow**

Shahid A.Sami<sup>1</sup>, Fazal Hameed Khan<sup>2</sup>

<sup>1</sup>Senior Lecturer & Consultant Cardiothoracic Surgeon, Section of Cardiothoracic Surgery, Department of Surgery, Aga Khan University, Karachi (Pakistan)

<sup>2</sup>Professor Anesthesia & Interim Chair, Department of Emergency Medicine, Aga Khan University, Karachi (Pakistan)

**Correspondence:** Dr Shahid A. Sami, Senior Lecturer & Consultant Cardiothoracic Surgeon, Section of Cardiothoracic Surgery, Department of Surgery, Aga Khan University, Karachi (Pakistan); Phone: +92 34864708; E-mail: shahid.sami@aku.edu

### **ABSTRACT**

There has been a rapid advancement in cardiac surgery and anesthesia recently. The burden of cardiothoracic disease in south East Asia especially in Pakistan is on the rise. To meet the challenges of future, the present day cardiologist, cardiothoracic surgeons and cardiothoracic anesthesiologists should be equipped with knowledge and expertise to train work force for future capable to treat the burden of cardiothoracic diseases. The future of cardiothoracic surgery and anesthesia is dependent on the advancements made in recent years in this specialty. It is time that the cardiothoracic anesthesiologists of the country embrace technologies such as transesophageal echocardiography and extracorporeal membrane oxygenation so that they can help in providing safe anesthesia and post-operative care for complex cardiothoracic operations.

**Key words:** Cardiothoracic Anesthesia; Challenges; Pakistan

**Citation:** Sami SA, Khan FM. Prepare today for tomorrow. *Anaesth Pain & Intensive Care*. 2016;20 Suppl 1:S1-S2

**Received:** 30 August 2016; **Reviewed & Accepted:** 10 September 2016

The history of cardiac surgery is not old. Rapid advancement in anesthesia, perfusion technology and surgical techniques saw exponential growth of cardiac surgery. An organ once thought to be untouchable is repaired, replaced or reperfused with reproducible, predictable and acceptable results against deadly diseases like coronary artery lesions and congenital heart diseases. However, established therapies are challenged by catheter based strategies for the treatment of congenital heart defects, valve replacement and coronary lesions. Cardiac surgeons, who are somewhat bewildered by catheter based therapies, have also started venturing in minimally invasive procedures.

In Pakistan, there is a large burden of cardiothoracic disease. The western countries have declining incidence of coronary artery disease but in South East Asia the incidence is not only increasing but affecting younger age population. The treatment of thoracic trauma, tuberculosis and many other thoracic diseases requires a number of hospitals with cardiothoracic surgery facilities, but

unfortunately only few hospitals in larger cities of the country are equipped to deal with such cases. Lack of intensive care units and intensivists also bestows additional responsibilities on the shoulders of anesthesiologists.

The projected population of Pakistan will be 227 million by 2025, with 63% individuals below 30 years of age. Moreover, the health sector in Pakistan is currently facing multiple problems i.e. lack of resources, healthcare providers brain drain and a low health related expenditure (Pakistan is spending US\$ 29.7 per person per annum, while Malaysia and Turkey are spending US\$ 346 and US\$ 696 respectively).<sup>1</sup> To meet the challenges of future, the present day cardiologist, cardiothoracic surgeons and cardiothoracic anesthesiologist should be equipped with knowledge and expertise to train work force for future capable to treat such a large population. Anesthesiology is the backbone of cardiothoracic services. The establishment of Pakistan Association of Cardiothoracic Anesthesiologists (PACTA) a few years

## prepare today for tomorrow

back, was the first positive step made in the right direction by cognoscenti. The organized training program in cardiothoracic anesthesiology leading to fellowship by the efforts of PACTA and College of Physician & Surgeons of Pakistan has been fruitful and producing high caliber physicians in the subspecialty of cardiothoracic anesthesiology.

The new cardiac therapies are bringing cardiologists, cardiac surgeons and cardiac anesthesiologists together in the form of 'Heart Teams'.<sup>2</sup> To work as a team member, leader or co-leader demands acquaintance with team dynamics. In the United Kingdom, the Royal College of Anesthetists offers a course in teamwork. The need of the time is to start leadership courses in Pakistan as well, to help nurture cardiothoracic anesthesiologists in line with modern standards. The Heart Team should strive to offer patient-centered care, maintain check and balance on quality of care and determine the best treatment for the patient. The team should continuously upgrade their knowledge and be current with new guidelines and developments. The famous 'Bristol inquiry report' identified that poor organization, failure of communication, lack of leadership and a 'club like' culture resulted in poor outcomes and increased mortality.

Cardiac surgical procedures, particularly coronary artery bypass grafting (CABG), are the most quantitatively studied therapies in the history of medicine. Each and every factor which may influence the outcome of surgery have been taken into account to analyze outcomes. Recently, the impact of anesthesiologists on CABG surgery outcomes was of interest on both sides of the Atlantic. A study in USA concluded that the rate of death or major complications among patients undergoing CABG varies markedly among anesthesiologists.<sup>3</sup>

The study from UK looked at the contribution of the anesthetist to risk-adjusted mortality after cardiac surgery and found the anesthetist role as a negligible factor.<sup>4</sup> Further studies and maintenance of a cardiac anesthesia database or its incorporation in existing cardiac surgery databases may be helpful in reaching to a final verdict.

In the prevailing environment of meager resources the cardiothoracic anesthesiologist's awareness to health economics is important. Cost saving may be achieved by fast tracking, a better control of infection, streamlining clinical pathways and pre-operative recognition and elimination of factors which may delay patient discharge from intensive care unit and from hospital.

The landscape of cardiothoracic anesthesiology is changing. The physicians practicing this subspecialty are expected to go beyond the boundaries of a conventional anesthesiologist and to become proficient in research, academics, database and its use, continuous quality improvement, health economics and development of new technologies. The future of cardiothoracic surgery and anesthesia is dependent on these advancements. It is time that all cardiothoracic anesthesiologists of the country embrace technologies such as transesophageal echocardiography (TEE) and extracorporeal membrane oxygenation (ECMO) and acquire the required level of proficiency, so that they can provide safe anesthesia and postoperative care for complex cardiothoracic operations, e.g. heart transplant etc.

**Conflict of interest:** None declared by the authors.

**Authors' contribution:** SAS – Research, manuscript editing; FHK - Manuscript editing

## REFERENCES

1. Pakistan 2025 one nation-one vision. Available on <http://pc.gov.pk/vision2025/Pakistan%20Vision-2025.pdf> (Accessed on 19 September 2016).
2. Holmes DR, Rich JB, Zoghbi WA, Mack MJ. The heart team of cardiovascular care. *J Am Coll Cardiol.* 2013; 61(9):903-7. [Free full text] doi:10.1016/j.jacc.2012.08.1034
3. Glance LG, Kellermann AL, Hannan EL, Fleisher LA, Eaton MP, Dutton RP, et al. The impact of anesthesiologists on coronary artery bypass graft surgery outcomes. *Anesth Analg.* 2015;120(3):526-33. [Fre full text]
4. Papachristofi O, Sharples LD, Mackay JH, Nashef SAM, Fletcher SN, Klein AA. The contribution of the anaesthetist to risk-adjusted mortality after cardiac surgery. *Anaesthesia.* 2016;71(2):138-46. [Free full text] doi: 10.1111/anae.13291/full

