

DWINDLING NUMBER OF CORONARY INTERVENTIONAL PROCEDURES

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A significant reduction has been observed in the number of coronary interventional procedures being performed especially in USA in the last few years.¹ The decrease was rather precipitous and too obvious to ignore. This has important multi dimensional noteworthy effects. Is it the beginning of a new start or the end of an old journey? Will the pendulum swing in the same direction of reduction in number or will it swing back to increase? If the number is going to decrease further then resource allocation and future development of interventional services have to be reconsidered and rationalized. More importantly it has to influence training programs for budding cardiologists and the numbers required for competency development have to be revisited. Question arises, were we doing too many before or are we doing too few procedures now and more significantly why?

Different reasons have been forwarded for this dramatic decrease. Many leading cardiologists boast of effective and efficient preventive strategy in vogue in the last decade to have resulted in decrease in the requirements for coronary interventions.¹ Emphasis on changes in life style like regular exercise, reduction in smoking and adoption of healthy eating and discretion in diet selection have been forwarded as possible causes.² Wide spread use of pharmacological agents that have been shown to mitigate the effects of CAD like aspirin, clopidogrel, statins, beta blockers, ACE/ARB inhibitors have been credited for the reduction in the requirement for the procedures.³ More effective control of hypertension, diabetes and dyslipidemia is supposed to have played a major role in reduction of frequency and manifestations of CAD and hence requirements for procedures.⁴

Growing evidence of data evaluating the role of procedures in short and long term effects had a significant role to play in revising the guidelines.⁵ Both indications for procedures are being reevaluated and utility in terms of reduction in outcomes has been under focus.^{6,7} The role of percutaneous coronary interventional procedures in acute coronary syndrome has been proven to be more beneficial and cost effective and is being supported by ACC/AHA and European guidelines.⁸ The utility of role of PCI in stable angina has been questioned in multiple studies and is perhaps a major reason for decrease in the number of procedures.⁹ This is a territory which may need revisiting with more data and evidence. The pendulum may have swung away from occluso-dilating reflex but it may find a more rational role in selected cases in the future.

Appropriateness criteria adopted internationally had a major role to play in rationalizing procedures and hence reducing the number. Every procedure contemplated must fulfill evidence based indication and every lesion considered has to be evaluated objectively before subjecting to intervention. Indications for coronary revascularization were developed considering the following common variables like the clinical presentation (e.g., acute coronary syndrome, stable angina), severity of angina (asymptomatic, Canadian Cardiovascular Society [CCS] Class I, II, III, or IV), extent of ischemia on noninvasive testing and the presence or absence of other prognostic factors, such as congestive heart failure, depressed left ventricular function, or diabetes, extent of medical therapy and extent of anatomic disease (1-, 2-, 3-vessel disease, with or without proximal LAD or left main coronary disease).¹⁰ Coronary revascularization is appropriate when the expected benefits, in terms of survival or health outcomes (symptoms, functional status, and/or quality of life) exceed the expected negative consequences of the procedure. The technical panel scored each indication on a scale from 1 to 9 as follows: Median Score 7 to 9: Appropriate procedure for specific indication (procedure is generally acceptable and is a reasonable approach for the indication). Median Score 4 to 6: Uncertain for specific indication (procedure may be generally acceptable and may be a reasonable approach for the indication). Uncertainty implies that more research and/or patient information is needed to classify the indication definitively. Median Score 1 to 3: Inappropriate procedure for that indication (procedure is not generally acceptable and is not a reasonable approach for the indication).

The clinical scenarios developed include coronary anatomy, as this is the focus of much of the previous literature on coronary revascularization. However, the writing group recognizes that for everyday patient care, symptom status, ischemic burden, and level of medical therapy often play a critical role in decision making even before the coronary anatomy has been defined by angiography. It is important to note that the indications focus on revascularization, percutaneous or surgical, and do not address diagnostic catheterization or coronary angiography; these criteria are currently under development.

Recent years have witnessed more emphasis on percutaneous aortic valve replacement with development of newer user friendly valves and refinement of technique and growing evidence of its role in very elderly and elderly patients and cumulative evidence of expansion of indications.¹¹ Development of newer techniques for percutaneous mitral valve repair have been the focus of interventional cardiologists attention and there has been an unprecedented surge in newer devices with varying results. New found emphasis on valvular procedures should not be a cause for reduction in coronary interventions but change of focus of most catheterization laboratories and departments may have some bearing on it.

With dwindling number of procedures many cardiology programs are struggling with the minimum number of cases required to develop competency in respective fields. If this trend has to continue then the leaders in cardiology may have to revisit this and define new numbers required. This may also invite our attention in development of better and more readily available simulation laboratories to develop skills and experience. This may witness renewed interest in development of 'real life like' laboratories and more 'how to do?' workshops and courses to compensate for reduction in number of procedures.

Stalwarts of cardiology may have to pause and reconsider the whole scenario in a broader perspective. It has been observed in the context of many procedures in different fields of medicine that a procedure is adopted and pursued with vigorous enthusiasm and then there is reduction in interest and hence numbers, only to increase again with eventual establishment of a technique in real life perspective. But this perhaps is the beauty and utility of evidence based medicine where growing research and data monitor the progress and determine the eventual place for the procedure evaluating indications and refining the technique.

Internationally dwindling number of coronary intervention procedures is a reality staring into our eyes. This has to be recognized and we have to look at our local data as regards to indications and appropriateness of procedures. We must monitor our procedures more rigorously and evaluate results more objectively. Bench marking of our procedures in context of national and international data is inevitable. Availability of NCDR registry to some centers is a welcome initiative of Pakistan Cardiac Society and it is imperative that all departments and institutes offering interventional services must develop capacity to join in and evaluate their data in international perspective. This will also help generate national data and guide us in developing evidence based guidelines for local use.

Reduction in number of PCIs is a new trend that requires cognizance and action. We must evaluate our local data and reassess our indications especially in the perspective of appropriateness criteria and newer guidelines. We must reassess that our patients are being subjected to interventional procedures for right reasons and indications. And that the procedures are being performed according to internationally established standards.

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