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Recent spurt of coronary disease among relatively young cardiologists in India

Dear Sir,

Very recently Mumbai's cardiology community was shocked to hear about the sudden and tragic death of one of its young, bright and budding cardiologists who died of sudden cardiac arrest. Such an unfortunate episode is a strong stimulus to the press, lay public and the medical profession to do some soul searching and ask a question – why?

One could ignore such an episode as a "one off" case. However in cases as these, a scientific thought process is bound to creep in to argue if there indeed was some sort of epidemiological or logical pattern.

Members of the cardiology community, whether past or present, have been the targets of extreme degrees of stress while attending to critically ill patients at odd hours. Is premature CAD leading to acute coronary syndromes a new phenomenon? Were the cardiologists belonging to the earlier generations affected by ACS as frequently as the present ones and that too *prematurely*?

Some how or the other it seems there is a subtle pattern in the process. There has been a tragic and sudden spurt in the occurrence of ACS amongst the new generation cardiology community in the city.

The purpose of this communication is neither meant to infringe on the private life of any individual nor to share the information regarding the personal health of any one whose history I might have known. These are merely general observations of the four generations of cardiology community of Mumbai city. Any conclusions that one might infer from this writing are purely observational and personal. They cannot be substantiated by statistical analysis, since the numbers are far and few. They may even appear to be too elementary and would certainly attract debate. However I thought, I owe it to my fellow cardiologists to share some of these observations:

1. Four generations of cardiology community of Mumbai.

Cardiology as a specialty began to shape up sometimes in the late 50s.

One could identify four distinct generations of cardiologists in the city.

I had the opportunity to closely observe my seniors in the first and second generation, work with my peers in the third generation, and train several of the fourth generation cardiologists.

The first three generations comprised of 30 odd cardiologists. They pioneered the specialty in various medical colleges and private hospitals. While the earliest ones were primarily clinical cardiologists, several of the later ones in the subsequent 2nd and 3rd generations were responsible for setting up cardiac catheterization and angiography laboratories. It was due to their untiring efforts that invasive and interventional cardiology came into existence not only in the city but all over the country. In addition to routine cardiac catheterization and coronary angiography, they were responsible for pioneering infant and newborn cardiac catheterization and further established coronary angioplasty and primary angioplasty programs.

All or some of them might have had silent or minimally symptomatic CAD. Considering 55–60 years as the average Indian life span during that era, as far as we know, all of them had fruitful and successful life beyond the sixth decade. None

of them was reported to have had symptoms of ACS or experienced sudden cardiac death *prematurely*.

More than 200 doctors qualified or trained to become cardiologists in the fourth generation. One would be appalled by the frequent news of CAD heralded by ACS occurring *prematurely* amongst the late third and fourth generation cardiologists. It has affected them between third and early fifth decade of their life.

Being convinced about the pattern, then the next natural question is why the difference?

2. Rising incidence

Various studies have highlighted the burgeoning incidence of CAD among Indians that too at a young age.[1,2] Their risk profile, coronary artery disease pattern have been well described earlier.[3,4]

Records from the municipal corporation of Greater Mumbai reported 24,450 deaths due to cardiovascular diseases in 2010 and 26,540 in 2011 – an increase of 1.5% in just one year! In both these years deaths due to cardiovascular diseases ranked number 1, accounting for more than one third of all reported deaths, these numbers are approximately four times to that of deaths due to cancer.

One can argue and rightly so, that the increased incidence among young cardiologists is a reflection of the overall increase in the number of deaths due to CAD amongst the general population but why so prematurely? While in a few, the premature event could be attributed to conventional risk factors, for the majority it remains an enigma.

3. Why the difference?

It will be hard to know the exact biochemical or the other risk profile difference amongst the four generations. However, nothing has changed that would have altered their lipid or glycemic values.

Visually, cardiologists of all generations seemed to have similar BMI. Current generation cardiologists appear physically fit, smart, and have access to gyms. They have greater knowledge about risk factor modification. Role of lipids and exercise. Control of hypertension is better defined now than in the earlier times. Moreover they have at their disposal aspirin, statins, beta blockers and ACE inhibitors or ARBs as anti hypertensives or cardioprotective drugs. Better drugs are available for diabetes and hypertension control.

Failing to identify known risk factors, one is left with the final suspect – "stress."

Some how or the other, stress has not been well defined as a major risk factor in the causation of CAD.

It is because stress is a personal feeling and cannot be measured like cholesterol, blood sugar or hypertension. However several recent studies have demonstrated stress as a significant risk factor for CAD.[5,6]

Investigators in the interheart study found a statistically significant association of stress at work in patients with acute myocardial infarction (AMI). The study was a case control study of acute myocardial infarction and included 5731 patients from Asia, including India.[5] In a recent study Wei Jiang et al found that acute ischemia in stable cad could be induced more often by mental stress than by physical stress.[6]

Were the cardiologists of earlier generation under lesser stress than the current ones?

It does not appear so. Stress is a relative phenomenon and the reaction of one individual to the same situation can be different from that of the other. It greatly relates to the fear of unknown, uncertainty to achieve targets, and fear of adverse outcomes. Since there has been a paradigm shift in the practice pattern from clinical/noninvasive cardiology to invasive and interventional cardiology, one could be justified in surmising that the invasive and interventional procedures could be the culprits.

The cardiologists treating patients in the earlier generations worked equally hard, since there were only few of them and had to put in long hours. The treatment was primitive, outcomes uncertain and dismally poor. High morbidity and mortality it would have caused as much anxiety as the invasive or interventional procedures of the modern times. The mind set was not programmed to the new procedures.

Even today, a noninvasive or a clinical cardiologist managing cardiac failure, arrhythmias, AMI will experience no less a stress as compared to his interventional counter part. A physician after administering a fibrinolytic will be equally apprehensive about intracranial bleed as would be an interventional cardiologist in the cath lab.

Unaware of the risk or safety of engaging a primitive coronary or a guide catheter, negotiating a nonsteerable wire or a rigid balloon through the coronary lesions, the pioneers would have had equal apprehensions while performing coronary angiography or angioplasty. They had to deal with unfriendly hard ware and poor back up from pharmacological agents. Outcome was anybody's guess. Reported mortality and morbidity of coronary angiography and PTCA in the earlier years was 0.1–0.3%, and 3–4% respectively. It certainly created enough ground for stressful situation.

4. What has changed?

Is it the stress of interventional procedures and their outcomes *per se*? Or is it the fierce competition, peer pressures or the desire to achieve certain unrealistic targets?

Since there is no measuring scale for stress, one can assume that all the four generations experienced equal stress performing their duty of rendering medical care to the cardiac patients by the modalities available to them in their own era.

Perhaps what has changed drastically is the peer pressure and the burning desire to achieve numbers higher than their peers.

Interventional cardiology is a specialty, full of glory, drama, achievement and feeling of success for having rendered the "final treatment". Monetary gains are tempting as never before. A noninvasive cardiologist is looked down upon as a laid back individual with comparatively small financial rewards. The temptation is too challenging to refuse! Therefore cardiologists who temperamentally are not suited to perform interventional procedures also venture into the cath

lab! The result is a mental mismatch between what one can and what one cannot do, creating a fertile ground for constant stress at work. Earlier a clinical cardiologist was as much respected as an invasive cardiologist and perhaps even earned more. Cardiologists self stratified themselves into clinical and invasive cardiologists. There have been several brilliant cardiologists who happily rendered excellent cardiology care to their patients without feeling belittled.

With rare exception every young cardiologist of today who graduates labels himself or herself as interventional cardiologist.

There are pressures from within and the administration to achieve numbers. There is *premature* desire to perform procedures that some of their seniors or more capable peers are proficient in performing. Live case demonstration stimulates a desire to do something they ought not to do in their daily practice. Corporate culture in the hospitals forces young cardiologists to achieve certain targets unlikely to be achieved by everyone such compulsions and pressures did not exist then.

The worst is the role of industry that identifies certain doctors as "key opinion leaders" or KOLs. Some of them group them with different star ratings. Perks are in abundance for KOLs and those with higher star ratings. Meetings abroad, long waits at airports at unearthly hours, atherogenic diet at conferences might have a lot to contribute to their coronary risk profile.

These observations are made only with the aim of putting in perspective a collective thought process to ask:

1) Whether the threat of premature ACS is real?
2) If yes, then why?
3) Can we prevent it?

It may seem ironical that a word of advice for prevention should come from an interventional cardiologist who has spent his life in the cath laboratory. But having witnessed repeated target vessel revascularisations, repeated procedures and morbid anatomy of coronary arteries, who else but an interventional cardiologist would be in a position to point out the ***palliative***, but of course an ***invaluable*** modality of treatment for obstructive CAD. Prevention seems to be the only answer.

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Obituary

The Cardiological Society of India expresses its deep shock and grief at the sudden demise of Dr. P. Moulik, Kolkata. Dr. Moulik was a valuable and esteemed member of our society.

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