Cardiology in India

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EDITOR'S PAGE

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I just returned from a one-week meeting/vacation in Southeast Asia during which time I learned a great deal about the nature of the practice of medicine and cardiology in India. It should be said at the outset that if you have seen one practice in India, you have seen one practice. I was impressed with the heterogeneity both of the issues faced by individual Indian physicians and the settings in which they addressed them. Much of the diversity seemed to be related to regional conditions. However, even within specific regions of the country, the variation in practices among Indian physicians and in comparison with the U.S. was often striking.

Any discussion about cardiology in India must begin with a consideration of the enormous burden and relatively unique nature of atherosclerosis in the country. A prior From Around the World paper in the *Journal* reported that cardiovascular diseases had overtaken infectious diseases as the number one cause of death in India. However, this paper did not fully convey the magnitude of the problem. Dr. Ajit Mullasari from Chennai provided some sobering statistics regarding atherosclerosis in the country, including data that the incidence of cardiovascular disease was 50% to 400% higher in Asian Indians than individuals of other ethnic origins. Many Indian cardiologists spoke of the not uncommon occurrence of myocardial infarction in very young individuals. About 50% of reported infarctions occur in Indian men under the age of 50 years, with 25% under the age of 40 years (1); in addition, some 30% to 40% of cardiovascular deaths occur between 35 and 64 years of age. An estimated 9.2 million productive years of life were lost to cardiovascular disease in India in 2000, a number that is expected to increase to nearly 18 million by 2030 (10 times the rate in the U.S.). An Indian Council of Medical Research project reported a prevalence of dyslipidemia of 37.5% among adults 15 to 64 years of age, with an even higher prevalence of dyslipidemia (62%) among young male industrial workers (2), and the rate of diabetes and hypertension is also alarmingly high. Interestingly, the 4-fold increase in the prevalence of cardiovascular disease in the 30- to 69-year age Indian group over that in the U.S. was generally similar in Indians living in the U.S. and India, in physicians and their spouses, in vegetarians and nonvegetarians, and in rural areas like Kerala and urban areas such as New Delhi. Although these data suggest the importance of genetic factors in accounting for cardiovascular disease in India, the relative role of genetics and environment remain uncertain.

About 50% of reported infarctions occur in Indian men under the age of 50 years, with 25% under the age of 40 years.

The challenges imposed by a developing economy also exert a significant influence upon the practice of cardiology in India. Myocardial infarction provides a good example. While we in the industrialized world focus enormous attention on primary percutaneous coronary intervention and door-to-balloon time, our Indian colleagues are often confronted with a different reality. Many Indians do not have good access to emergency transport services and may come to the hospital by bus. Those who drive or come by ambulance often encounter massive delays due to traffic congestion. In some regions, the ambulances are not equipped with defibrillators, and the concept of transport to a facility

with a catheterization laboratory is unrealistic. Thrombolysis with either tissue plasminogen activator or streptokinase remains a commonly-employed treatment, especially in government hospitals (which I was told usually do not have percutaneous coronary intervention services), and many thoughtful and knowledgeable Indian cardiologists espoused the value of pharmacoinvasive therapy of myocardial infarction. Of course, the circumstances encountered vary enormously by region.

The ways in which Indian cardiologists confronted the issues provided by the prevalence and circumstances of cardiovascular disease were often somewhat unique. A number of Indian physicians told me that they owned their own hospitals, and this is apparently fairly common in the country. Although the hospitals were usually relatively small, they apparently provided both medical and surgical services. In my experience, such physician-owned hospitals are rare in most countries. Given the enormous number of cardiovascular patients, my Indian colleagues told me that they were typically scheduled to see 60 patients in a single clinic session. Even with this heavy schedule, they were usually booked for a minimum of 3 months in advance. Most physicians also have office hours from 7:00 PM to 9:00 PM at the end of the day, and the usual work week is 6 days. That they are able to fulfill the demands of such a practice attests to the skill and dedication of Indian cardiologists.

I was told that only 10% to 20% of the population had health insurance. This low level of funding for health care had some interesting consequences. Obviously it presents a significant challenge for physicians to earn a living, and it requires them to work long hours to achieve adequate compensation. My impression was that the income of Indian cardiologists was not at the level of those of us in the U.S., although I did not hear one complaint in this regard. However, it did present an impediment to caring for those who had no insurance whatsoever. On the other hand, the low level of funding for health care resulted in relatively low cost. The cost for bypass surgery in India was said to be approximately 25% that of the U.S. This favorable price differential has already resulted in attracting patients worldwide for a variety of procedures. My Indian colleagues anticipated that this cost differential was the basis upon which they could build an international practice for cardiovascular procedures.

The Indian government has become aware of the epidemic of cardiovascular disease and diabetes, and is taking steps to address the problem. I was told that the government has appropriated a large sum of money, in the billions, devoted to fighting cardiovascular disease, and is currently considering how to utilize these resources. A tax on the three "S"s (sugar, salt, and smoke) is being discussed, among other actions. Clearly, if there ever was a crisis that necessitated a call to action, India is confronting one on the diabetes/cardiovascular front. It is encouraging to see that they are responding.

My experiences in Asia produced a variety of responses. I was taken aback by the magnitude and nature of atherosclerosis in India, particularly with premature coronary artery disease. This represents a scourge that is more severe than that seen in the Western world, and one that calls for immediate and rapid action by health agencies in India and abroad. In particular, I was surprised that more intense studies of the genetic contribution to cardiovascular disease had not been undertaken. If there was ever a role for a "polypill"-type approach to risk reduction, India would seem to be the perfect candidate. I was also impressed by the knowledge, skill, and dedication of Indian cardiologists. Despite less-available resources, they are obviously familiar with the recent literature, hungry for new information, innovative, and capable of providing high-level care to their countrymen and women. They work extremely hard, and without complaint under circumstances that are often very difficult. That the rest of the world is attracted to the high-quality, low-cost medical services that they can provide should not be surprising, and presents a challenge for those of us in the industrialized world. As has been nearly universally true, traveling to other countries has been an enlightening, and often humbling, experience. I had been invited to teach, but in the end, I learned much more than I taught.

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