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Needs for specialized medical care (cardiac surgery) in the Ural Region and comparison with Western Europe (PAPER)

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„Senza soldi i santi non fanno miracoli“ - „Without money the saints do not perform miracles“ Old Italian proverb.

Cardiac health care in the Western World and elsewhere

Access to cardiac care remains disproportionate around the world. About 80% of cardiac care activities, including cardiac surgery and/or catheter-based procedures, are available to 9% of the world population in North America and Western Europe. The costs increase for cardiac care activities continues to rise with expanding role of technology. The guidelines by American or European Societies about adequacy of different cardiac care services and facilities are 'untenable' in many parts of the world. What remains unclear is what is adequate or appropriate, especially in non affluent countries where health care facilities are distributed unevenly. Different standards emerging in different parts of the world need not be considered as something bad per se. Evolution of unifying criteria of appropriateness and necessity would lead to a more uniform pattern of referral. In less affluent economies, a bias for wide-spread fostering of interventional technology may affect the quantum but also the quality of care delivery for different heart diseases.

What is an essential ingredient of quality of service/ training in one country/community/culture may be considered unnecessary/irrelevant in another. Role models for cardiac care delivery may be regional. 'Universal' standards based on reality in one country or one civilization will not bring in the desired quality or a greater quantum of care to greater number of patients. Comprehensive algorithms of universal appropriateness of patient selection and adequacy of treatment options/technologies need be developed on long term outcomes. Avenues for updating technology in non affluent countries need to address the information and skills transfer methods, content of the literature and the education system, profession-industry relationship, the economics of increased output of care, and the role of obsolescent or evanescent technologies.

Altruism and charity has been the basis of some international efforts in information and skills transfer in cardiac surgery to those countries with a major need for expansion of health care services. Local training in recipient countries and collateral training in existing regional centres need to address the long-term resources and restraints of recipient countries in developing the norms and avenues of growth.

High profile visits of 'expert' teams from the developed world often have rather low impact as the soil may not be ready for the seed. Preparedness is often lacking not in absorbing the technical expertise but in infrastructure and the acceptance of the recipient community. Moreover, ground realities of the economics of the recipient countries are often different. Such help in the past has been inspired as much by altruism as by the financial pressure of the sponsoring organizations (private or government or joint sector). Moreover, in certain instances such exercises have degenerated into colonialist harvesting of patients. Help from the developed world to foster activist cardiac care in disadvantaged areas of the world has to come as aid to equal partners, and not as investment in potential colonies. It has to address primarily the needs of the recipient community and not the future needs of the 'exporters.' In absence of fairness, the recipients will always find out better alternate source of technology - transfer. Any exercise overtly towards that goal is likely to become counterproductive.

Cost containment has been one of the compulsive considerations. Industries have their reasons for developing disposable once, only products which are cloaked in scientific data to avoid possible complications. Improvisations in the developing world often get around that prohibitive cost of disposables by resterilizing such products. Legislations have been brought in several western countries for compliance with such single use protocol. But multiple use of 'disposable' material in

cardiac surgery in India, Eastern Europe, Russia and several South American countries is a current reality, and has led to exponential growth of cardiac procedures in these countries, with reportedly similar morbidity and mortality as in the West. Many prolific cardiac surgical programs in the developing world owe their origin to humble beginning with resterilized disposable materials and other products, and a great deal of improvisations. If rendering service is the ultimate goal, at times it is expedient to ignore the plumage and care for the dying bird.

Brain drain due to migration of related health professionals has been an oft-lamented, oft-cited cause of lack of growth of cardiac surgical facilities in many developing countries. Now may be the time to consider such migration as a move to brain sanctuary. Activist cardiac care centers demand expertise which cannot be sustained in absence of adequate work load and adequate working conditions. Moreover, such migration allows for higher turnover in limited training and work positions in cardiac surgical facilities in source countries. Besides inflow of remittances, it allows for future and potential bridges for flow of information and technology and investment, as has been noticed in Hungary, Greece, Turkey, India, Thailand, and the Philippines. Restrictive legislative measures, as introduced in some countries, may be short-sighted measures. Free migration of related health professionals may pave the way for bidirectional movement for outsourcing at a later stage and will foster growth of cardiac surgical facilities.

Rapid growth in communication technology and internet sites have helped to provide access to information and dissemination of knowledge to bridge the gap of scientific isolation of cardiac surgeons in the disadvantaged countries with little time lag. A special attention has to be driven to the Resources get diverted to exotic diseases and technologies with short shelf life, thus accentuating the 10/90 gap. Besides the cutting edge information, current medical literature needs to reflect the current reality of practice to foster awareness of appropriate care.

Cardiac surgery in the Ural Region: a cooperation project of the University of Berne

Cardiac surgery is nowadays a well established surgical speciality overall around Western Europe. The services are mostly functioning as Heart Center, including cardiology, cardiac surgery, anaesthesiology and cardiac intensive care in the same department. The success depends mainly on their ability to work independently from other surgical specialities, since the requirements of patients are quite different from those met in general surgery or in traumatology. In the majority of Western European countries, cardiac surgery has been supported extremely well by the authorities because the surgical treatment of cardiac diseases may be very successful in terms of costs and benefits, restituting a good quality of life and the ability to work for a vast majority of patients. In the last 10 to 20 years, an increasing proportion of health budgets has been directed to the treatment of cardiac diseases (mainly interventional cardiology procedures and cardiac surgery, including artificial heart and transplantation).

The situation is completely different in several regions of the former Soviet Union. For instance, in the Ural Region with 3.5 mio inhabitants (Capital Perm, 1 mio) cardiac surgery has been available only since 1999 and was based on a individual decision of a vascular surgeon who got his training practically in a autodidactic fashion. For that reason, only a small volume of cardiac surgery procedures has been performed at the Perm Heart Institute (Head: Prof. S. Shukanov), the unique institution dedicated to the surgical treatment of congenital and acquired heart diseases in the Perm Region, despite an excessively high requirement, looking at the numbers of patients who are classical candidates for an open heart operation.

The total number of operations performed during the last 2 years corresponds to approximately 100 open heart surgeries per million of population. In Western Europe, the need for cardiac surgery is estimated to be around 1000 operations per million of population. I do not believe that these numbers should be compared one to one, but they clearly show the negative balance in term of access to cardiac care for Perm region patients.

Surgery for infectious heart valve leiosns still plays a major role in the adolescent and young adult population. This is followed by corrective surgery for congenital heart disease in children and infants. The most significant differences between Perm and Switzerland is the age of the patients who are treated; in Switzerland congenital heart surgery is performed as a corrective therapy in the very young age, allowing the newborns and children a normal development without or with only minor restrictions for the future life. In contrary, a large number of patients that I was able to see or to operate in Perm has received some type of palliation in Moskau or in Nijni

Novgorod in the 1990'ies and were doing extremely poorly, limited in their daily life by shortness of breath and extreme fatigue, limiting therefore their ability to go to school or to work in a stable environment. In these patients only total correction is able to modify the physical performance.

Is there a role for prophylactic treatment of cardiovascular risk factors to decrease the number of people with coronary artery disease for instance? In Western Europe, the answer is clearly yes but it needs still debate why success is moderate: cessation of smoking, treatment of arterial hypertension and reduction of blood fat levels have been shown to have a positive impact on the onset of coronary artery disease; however, the compliance of the patients is also of paramount importance. In addition for patients who have already contracted the disease, prevention will not be successful and these patients need treatment, either by surgery or by balloon dilatation.
The cooperation between the Clinic for Cardiovascular Surgery of the University of Berne and the Perm Heart Institute started in 2002. During the first 2 visits we have made an in-depth analysis to understand the needs (teaching, material, literature, personal requirement) of this institution. The cooperation is based on mutual visits (twice a year in Russia, one every second year in Switzerland), financial and material support, as well as exchange of opinions for clinical work and research activities.

During our last visit, we have been surprised by the excellent level of care delivered by all specialists around Prof. Shukanov. Not only the quality was remarkable but also the low costs associated with all types of procedures performed were outstanding.

However, there are still political and legal conditions which make the cooperation difficult. Customs administration is quite reluctant for the import of disposable material and implants for patients, even if everything is dealt at a pro forma invoice condition, which means that our institution and sponsoring industrial partners give every material free of fees: we hope for simplified administrative conditions and closer contact with the Swiss Governement (Department of Entwicklung und Zusammenarbeit) and the Russian authorities. We have strongly encouraged the local politicians (Perm region governor) to give optimal support to the Perm Heart Institute since we are convinced that this institution fulfils important goals for the Perm region population.

From what we have seen, the Institute is dealing very economically with the financial support and the costs for full surgical treatment are rather low compared to those in Western Europe. The European Association of Cardiothoracic Surgery is supporting our activities and promotes teaching courses for colleagues of Eastern Europe at the European Heart House in Bergamo. However, long-term financial support is urgently needed for basic equipments and disposable materials necessary for all types of cardiac operations. Independently of what may happen, we will continue our support for cardiac surgery in the Perm region.

Conclusions

Insufficient cardiac care in the midst of scientific abundance of the present era is a ground reality in countries with limited resources. In the evolving scenario of globalized economic model and the so-called free market forces, the rural and the urban poor are going to be further marginalised in the process of structural adjustments as dictated by the international monetary fund, world bank etc. What are the options in non affluent countries to improve the health care, the income-generating capacities and access to a better quality of life with dignity that they deserve? The medical community cannot allow a large section of population in non affluent countries die without ever affording the 'correct' but expensive treatment. Harrison's concerns (in the Principles of Internal Medicine 12th Edition) remain relevant today: "It is becoming increasingly necessary to establish stringent priorities in the expenditure of money for health care...as resources become more and more constrained, it will be necessary to weigh the justification of performing costly operations that provide only a limited life expectancy against the pressing need for more primary care for those persons who do not have adequate access to medical care. In the last analysis the medical profession should provide leadership and guidance to the public in matters of cost control, and physicians must take this responsibility seriously without being or seeming to be self-serving. It is important, however, that the socioeconomic aspect of health care delivery not be permitted to interfere with the concern physicians have for the welfare of their patients."

The objective of cardiac surgeons (like every medical doctor) remains to take the best care to all their patients. It will be a sign of maturity of cardiac specialists to establish national standards of care and treatment and com-

pare these with the emerging data from different parts of the world. Such differing standards will reflect the ground realities.

In the evolving epidemic of cardiovascular disease in developing countries, most of the global cardiovascular disease burden shifts to the non affluent countries. Thus, the language of cardiac care needs to be universal, irrespective of the region where the care is delivered.

Unfortunately, it is presently still a dream to hope that emergence of comprehensive algorithms of universal appropriateness of patient selection and adequacy of equivalent technology of treatment options would lead to growth of more specialized health care centers all over the world to make the benefits of equivalent cardiac care accessible to millions more of people.

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