

The Coming Cancer Scare

Numbers of an Epidemic

The number of cancer cases in India is predicted to double in the next 20 years. This will exact onerous social and economic costs on individuals, their families and the country

A few months ago, a large number of medical scientists pored over databases of cancer patients in India. The scientists were from cancer hospitals and research centres like Tata Memorial Centre, All India Institute of Medical Sciences (AIIMS), Kings College in London, and other major cancer centres in India and abroad. Cancer databases on India are scarce, and are not always reliable due to the inadequate documentation of cancer cases in the country. But what was available was enough to tell a striking story: India is on the verge of a major cancer epidemic. India reports about one million new cases every year. This is 15% less than the US, whose population is one-third that of India. The disturbing fact is that the India number is predicted to double in 20 years, according to the International Agency for Research on Cancer (IARC), based in Lyon, France. An even more disturbing fact is that, in spite of a much lower rate of incidence, as many people in India die of cancer as in the US. Cancer mortality is high in India, says CS Pramesh, professor at the department of surgical oncology at the Tata Memorial Hospital in Mumbai. And so the impact of cancer on Indian society is very high. Pramesh was among the doctors who did the study, which was published this week in a series of papers in the medical journal Lancet.

The Costs

The GLOBOCAN project of IARC, which looks at cancer statistics in 184 countries, estimated that 14 million new cases were recorded in the world in 2012. About 8 million people died of cancer in 2012, of which nearly 700,000 were in India. So, India has 17% of the world's population and about 8% of its cancer patients. But these figures are deceptive, as India has a lower life expectancy and an overwhelming proportion of young people. In the US, 1.6 million are expected to be diagnosed with cancer this year and 585,000 are expected to die. So, the cost of cancer to Indian society is much greater than in developed countries, and this cost is expected to rise quickly over the decade. Cancer knocks off 2% of the world GDP. No one knows what this number would be in India. The rising incidence of cancer in India is usually explained away by demographics. People are living longer, and cancer is often the disease of an aging population. However, there seem to be other factors at work. A majority of India's cancer patients are between 30 and 69 years of age, an anomaly that cannot be simply explained away by saying that it has more people in that age group. Something else seems to be at work that is adding to obvious causes like smoking, and we don't quite know it as yet. But we do know the disease is disrupting Indian families and their finances. Cancer affects everybody, says Kiran Mazumdar-Shaw, chairman and managing director of Biocon. She should know: she has seen her mother and her best friend die from the disease. In the near

future, which is actually the present, cancer will extract a big cost from households. At 3.9% of GDP, Indian spending on healthcare is one of the lowest in the world. Of this, the government spends only 21%, leaving people to fight major diseases on their own. With early detection and better therapies, more and more cancer will be cured or better managed. The costs, however, are not easy to manage. India cannot afford to spend huge amounts of money caring for sick people, says Ajay Mahal, chairman of global health at Monash University in Australia. A year ago, Mahal was the first researcher to estimate the financial burden of cancer on Indian households. He and his colleagues used data from 74,000 homes and looked at 1,645 homes with a cancer patient. They found that cancer-afflicted homes spent 36-44 % more during the period under study. They borrowed more and sold assets, and put additional burden on healthy members of the family. Data for this study is from 2004, and costs have only increased since. Health expenditures rise faster than household income, says Mahal.

The Causes

This cost will keep rising. Newer methods of diagnosis and cures require high investments. As technology advances, the cost of diagnosis and monitoring keeps going up. Newer drugs are expensive. With genetic screening, cancer is now increasingly treated individually, and targeted therapies are more expensive than general ones. Cancer patients are living longer, which also means longer duration of treatment. All this is bad news in a country where most medical expenses are out of pocket. There is considerable private investment in the corporate sector, says R Sankaranarayanan, special advisor on cancer control, IARC, but many do not complete treatments due to unaffordable costs. India's poor infrastructure is one of the reasons why so many die of cancer. It is often detected late, where it has advanced to a point where treatment is difficult. India's leading cancers in men are also not curable: lung cancer and oral cancer. The second highest killer in the country, cervical cancer, is curable but not detected early enough. Smoking and tobacco use is the leading cause of cancer in India. Quit rates of smoking in India are quite low when compared to that of the West, says Prabhat Jha, cancer researcher and chair of disease control at the University of Toronto. In a report released two months ago, IARC warned that cancer can be beaten only through a combination of prevention, early detection and new therapies. In India, this means finding the main causes and removing them. Recent research throws up clues on what is wrong besides smoking and tobacco use. For example, people along the Ganges Belt get the deadly gall bladder cancer, and pollution is the likely cause. Those living along the coast get stomach cancer, and the cause seems to be fried fish. There are general causes as well. Fatty food and sedentary lifestyles are a deadly combination. Women who have few children and in later life are at risk of breast and ovarian cancer. There seems to be a link between air pollution and lung cancer. Widespread use of plastics is another major cause, especially when burnt in open fields. Cancer is going to be India's biggest epidemic, says Harit Chaturvedi, chief oncologist of Max Healthcare. No one seems to be safe from this malady.

And the Business Around It

From hospital chains to equipment manufacturers, from technology developers to drug

manufacturers,business activity around cancer is seeing a spike,reports Hari Pulakkat

Joseph Nicholas,CEO of Cancer Treatment Services International (CTSI),had been travelling to India for seven years before he set up shop here.He had noticed something significant during his trips: India was an underserved market for cancer care.It had a large number of cancer patients and a small number of cancer hospitals.Unlike in his native US,different hospitals in India gave widely differing treatment options for cancer,with widely differing costs and quality.He had set up CTSI in the US in 2006 to provide university-level cancer care to underserved areas around the world.What better place to go international than India CTSI is investing heavily in India.It has received \$120 million in funding from two investors to build a network of 25 centres.GE,which is a minority investor in CTSI,is itself on an investment spree around cancer,and a good chunk of it in India.So are other equipment manufacturers,leading hospital chains,technology developers and cancer drug manufacturers.The Indian healthcare sector has spent the last decade or two focussing on diabetes and cardiovascular diseases,but it is now shifting its attention to cancer.Says Nicholas: There is an opportunity to provide good cancer care by standardising treatment.

The Capacity Rise

Setting up a cancer care facility is expensive.Just a linear accelerator,used for radiation treatment,will cost about Rs 10 crore or more.It is difficult to set up such advanced facilities in rural areas because there is no critical mass of cancer patients.So,CTSI will use the hub and spoke model about five hubs and 20 spokes to provide good cancer care in remote areas.Not all of them are greenfield ventures it will take over some existing facilities.Cancer patients outside big cities spend 40-60 % of their total expenses on travel.A large network of rural centres can reduce this cost substantially.Other hospitals are also expanding their cancer care,by adding facilities and beds.The Delhi-based Max Healthcare is increasing its investment on cancer care by 40% every year,and its immediate plans include the setting up of a 500-bed cancer hospital in the National Capital Region.Healthcare Global (HCG),which has already invested substantially in 27 centres over the last eight years,is also on an expansion spree.Its plans include another 10 centres in small towns and a Rs 250 crore proton therapy centre in Delhi.The total investment planned by it in the next three years: Rs 700 crore.Such massive expansion has one sideeffect : it creates massive technology application.

The Technology Play

Technology is coming into cancer care in many different ways.Some companies are redesigning diagnostic and monitoring equipment for Indian needs,with increased portability and substantially lower cost.Start-ups and small technology companies are developing methods like whole genome sequencing that improve the outcome of treatment.And drug companies are developing low-cost cancer drugs for the Indian population.Says Terri Bresenham,President & CEO of GE Healthcare South Asia: Low-cost screening tests can help shift the detection of cancer to an early stage. The high cancer mortality in India is partly due to late detection,and shifting the detection of cancer to an early stage improves the outcome significantly.For this,the costs of detection and monitoring have to come down.Which is why GE

and Philips have been developing low-cost imaging equipment for the Indian market. A few weeks ago, GE launched a PET/CT scanner in India that is 40% cheaper and was developed at an investment of Rs 90 crore. Even with high-priced equipment, costs in India are low. Says Ajai Kumar, managing director of HCG: India has mastered the art of capacity utilisation and has become the cheapest healthcare provider in the world. Low-cost diagnostics can bring cancer care to smaller towns and rural areas. Infusion of technology would change cancer care in other ways as well. For example, 70% of cancer patients do not respond well to the first line of chemotherapy. This is because the genetic make-up of the tumour makes it resistant to several drugs, but the oncologist can find this out only through trial and error. High-speed and low-cost sequencing methods can change this situation, and it has begun to happen in the country. Two companies Strand Life Sciences and Medgenome have started offering this service in India, and a few more companies collect samples and send them abroad for sequencing. Whole genome sequencing costs several thousand dollars in Europe and US, but is done for Rs 30,000 to Rs 40,000 in India. The low cost and decreasing duration three weeks at the moment increasing the use of this technology. Strand Life Sciences, for example started a commercial sequencing service about six months ago, and has already sequenced samples from 200 cancer patients in several hospitals. Cancers of the breast, lung, ovaries and colon usually have mutations that can be targeted with specific drugs, and sequencing is especially useful in these cases. Says Kas Subramaniam, chief technology officer of Strand: The consensus of doctors in the US is that sequencing should be part of standard cancer care. The increasing incidence of cancer in India has got the attention of drug-makers as well. Major generic cancer drug manufacturers like Natco Pharma, BDR Pharma and Biocon have all strong pipelines of drug under development. Biocon, which introduced its first anti-cancer biological, CANMAB, three months ago, has at least seven anti-cancer molecules under development. With its strong base in biology, Biocon has focussed largely on biological molecules against cancer. BDR Pharma, although a recent entrant to the game, is focussing on developing generics for lung, breast, prostate and colon cancer. The fate of Indian anti-cancer drugs will depend on Indian government policy, on whether it grants compulsory licences or not. Indian firms are proceeding on the assumption that it will continue to do so. hari.pulakkat@timesgroup.com