

THE GLOBE AND MAIL

Cancer studies face national funding crisis

As hospitals scramble for philanthropic dollars, many fear that only pharmaceutical firms will have pockets deep enough for trials

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It is a critical question: Is one week of radiation treatment after breast-conserving surgery just as effective at preventing cancer recurrence as 16 days? Mark Levine organizes a trial seeking the answer, but last month two Alberta cancer centres declared they could no longer enroll patients due to insufficient grant money.

"It's the perfect storm," said Dr. Levine, chair of McMaster University's oncology department. "Most clinical trial departments [in cancer] across Canada are in a deficit situation."

Studies are being dropped or stopped because the cost of conducting them has soared. The price is now as much as \$20,000 a patient, more than a sixfold jump in the past decade. The very progress of medical science has helped spawn the problem: Effective treatments and therapies mean patients, particularly those with cancer, live longer than ever. That means many years - not months - of follow-up study that includes increasingly expensive tests, such as MRIs, CT scans and the collection of tumour samples.

And hospitals that once absorbed some of these fees have their own fiscal worries. Faced with fixed budgets and a clampdown on costs in a battered economy, many no longer have the leeway to pay for extra tests and imaging studies beyond the normal course. Many are insisting that trials be totally funded by outside grants. At the same time, the recession has reduced philanthropic dollars, trimming another source of money. These troubles mostly plague academic physicians, not pharmaceutical companies that pay for their own studies.

"That trial was going like gangbusters," said Dr. Levine, of the study that has enrolled more than 1,000 of the 2,000 patients required and continues to accrue breast cancer patients in more than 20 Canadian centres. "The danger is the people now with the most money are the pharmaceutical companies. If [trials] are done based solely on a cost-recovery basis, we will not be able to do the trials funded through peer-reviewed grants."

In addition, studies such as the one Dr. Levine co-ordinates as director of the Ontario Clinical Oncology Group often do not generate revenue - there is no device to sell or drug to push when the results roll in. The answers instead come in the form of better patient care. If the study showed it was just as safe and effective for early stage breast cancer patients to complete radiation treatment twice daily over five days - instead of once daily over 16 - it would be a boon to cancer centres as more patients could be treated with the same resources.

"To be honest," said Amit Oza, a medical oncologist who is the head of the clinical cancer research unit at Princess Margaret Hospital, "my workload would be cut down by 50 per cent and my

income would not change [if I did not do clinical trials]. It's not financially rewarding. What's really rewarding is being able to offer treatments that would often be unavailable to patients."

Dr. Oza pointed out that some cancer patients, for whom standard treatments no longer work, end up living for years going from one clinical trial to another, adding that "when you see that, it's absolutely fabulous."

Princess Margaret Hospital has one of the highest rates of enrolling its patients in clinical trials - almost one-quarter of them, according to 2008 data from Cancer Care Ontario, the latest available. The hospital makes clinical trials and drug development a priority and provides core funding to support certain studies, Dr. Oza said.

By contrast, only about 5 per cent of patients enroll in clinical trials at the BC Cancer Agency, according to Kim Chi, medical director of its clinical trials unit.

"We have to be careful about what we open," Dr. Chi said.

"But at the same time there is a big need to be able to open more trials to offer to our patients. The more we have open and the more patients can volunteer, then the faster we will be able to find more effective treatments."

One BC Cancer Agency study - to determine whether bisphosphonates, a bone-building drug, could help prevent the spread of breast cancer - failed to get funding for two years. Now the research is happening after all, courtesy of an American granting agency, the National Institutes of Health.

"It's a happy ending," said Hagen Kennecke, principal investigator at the cancer agency's clinical trials unit. "It is a battle but trials are possible and we need to keep doing them for our patients in Canada."

For many other scientists, there is no saviour. Only 19 per cent of applications - 65 grants - were funded by the Canadian Cancer Society in 2009-2010.

An even bigger number, 76, were strongly recommended but not funded, and another 158 grants were approved but not funded during the same period.

"It just gets depressing when you see how much gets left on the table," said Michael Wosnick, vice-president of research for the Canadian Cancer Society.

"...I have no way to know whether the next Nobel Prize winner in cancer research ... doesn't get funded because we just don't have the money."

The effects can be felt not only on Canadian patients but on the country's reputation for scientific innovation.

"Where does it place Canadian investigators in a global environment, in terms of the competition to be successful in research?" asked Ralph Meyer, director of the NCIC clinical trials group.

"This is something we need to systematically address."

Canadian success stories

Canadian scientists have been at the forefront in a number of high-profile clinical trials that resulted in important treatments for cancer patients. Among them:

Cetuximab in colorectal cancer. The monoclonal antibody targets a protein called the epidermal growth factor receptor. The drug works by binding to the protein, which interferes with the growth of cancer cells. It shrinks tumours and delays tumour growth in some patients, especially when used in combination treatment.

Letrozole in breast cancer. The non-steroidal aromatase inhibitor is used to treat cancer that is hormone receptor positive or has unknown receptor status in women who are postmenopausal. It works by reducing the production of the sex hormone, estrogen, and provides another treatment to women after they have completed five years of tamoxifen, a drug used to prevent cancer recurrence.

Erlotinib in lung cancer. The targeted drug therapy used to treat patients with advanced non-small-cell lung cancer. It targets a protein called the epidermal growth factor receptor that is found at abnormally high levels on the surface of many types of cancer cells, including many cases of non-small-cell lung cancer.

Temozolomide in glioblastoma multiforme, a type of malignant brain cancer. The cytotoxic agent is designed to prevent the replication of cells that divide rapidly. It is given to patients who are on radiation after surgery for the brain tumour.

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