

Women doctors offer alternative to costly mammography

→ Peter McIntyre

Breast examination by specially trained young women doctors is proving effective at picking up tumours in the general population in a number of developing countries. If it can be shown to affect mortality rates, this low-tech screening method could provide a solution for poorer nations, and may even force a rethink in richer ones.

Early detection and quality treatment are twin pillars in the strategy adopted in the West to reduce mortality from a rising incidence of breast cancer. Early detection in this context means mass screening by mammography, backed by better health education about breast self-examination and breast cancer treatment.

But mammography is expensive, difficult to do and detects some cancers that were never going to be a problem. Some argue that other methods of early detection allied to treatment with tamoxifen and adjunctive therapy would save as many lives without detecting so many benign lumps and cancers that would never need treatment. In richer countries with sophisticated healthcare systems doubts tend to be outweighed by the overall success of the strategy. It is assumed that the smaller the lump detected, the better the survival outcome. Consequently, this model has also been proposed as the way forward for other countries considering screening.

Developing countries have neither the resources nor the infrastructure to establish mass

screening by mammography, which requires a large number of radiographers to take the films and highly trained radiologists to read them. They have therefore been left with no viable strategy.

The international community consoled itself with the thought that breast cancer is a disease of affluence and of women who postpone childbearing and have fewer children. Increasingly this view is being challenged and the need for early detection in developing countries is being asserted, especially as the lives of women change.

Indraneel Mitra, director general and head of oncology at the Bhopal Memorial Hospital and Research Centre in India, is keen to find alternative routes to screening. He says: "If you ask three different radiologists to read the same mammo-gram you get three different answers. If you screen 10,000 women for seven years you save four lives. Even in the best countries mammography is hugely complex and to establish this in developing countries is impossible in my view."

In 1997, while working at the Tata Memorial Hospital in Mumbai (Bombay), he set up the first randomised trial of early



Young women doctors explain the breast screening process to women at a Cairo clinic

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detection of breast cancer, comparing screening through clinical breast examination with no screening. The trial recruited women from 10 socially disadvantaged areas of Mumbai, dividing each area randomly into a study group and a control group.

Women in the study group and the control group both received health education about breast awareness. In addition, health workers carried out clinical breast examination on women from the study group, referring those with suspicious findings for further specialist examination. In the first batch they enrolled 75,000 women, and another 75,000 in the second batch. In the first round of screening, breast cancer was three times higher in the screening group than in the control group. In the second round the difference was less, but still more than in the control group.

This trial, funded by the US National Cancer

Institute and the Tata Memorial Hospital, is now into its fourth round, but Mitra says it is still too soon to determine the outcome. “The objective of screening is not simply detecting cancers early; it is to demonstrate that the screening has been worthwhile. The end point you are seeking is a reduction in mortality.”

Mitra believes this trial does demonstrate that screening by clinical examination can be efficiently set up and is acceptable to the population. “It has been a highly complex exercise. You have to screen many women to detect one cancer and you have to pay huge attention to detail.”

Egypt was the next country to pilot this model. Vittoria Buffa, wife of the then Italian ambassador to Cairo, wanted to fund an ongoing project from money raised every year at an Embassy bazaar. The fundraising organisers (mainly women) suggested something that would

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promote the interests of Egyptian women. Buffa talked to people at the Italian Hospital in Cairo, who put her in touch with the Challenge Fund, set up ten years ago by the European School of Oncology (ESO) to support health professionals in countries with limited resources.

An international team was formed to oversee the Cairo pilot study, including Salwa Boulos, a radiologist at the Italian Hospital, Mohsen Gadallah, a public health doctor from Ain Shams University Cairo, Alberto Costa of ESO, Indraneel Mittra and Anthony Miller, from the University of Toronto, who worked for 15 years on World Health Organization cancer control programmes, as well as the Canadian National Breast Screening Study. The pilot also won the backing of Egypt's first lady, Suzanne Mubarek.

As a radiologist, Boulos is well aware that breast cancer is not talked about, not diagnosed and therefore not treated in time. “Diagnosis of breast cancer is usually late and the prognosis is poor,” she said.

The first phase of the pilot began in May 2000 with about 5,000 women aged 35-64 living in an area around the Italian Hospital. Social workers conducted house to house visits and the 4,116 women who agreed to join were taken through a questionnaire and invited to attend a nearby health centre for examination by young female doctors who had received special training. In all, 2,481 women were examined. Women were given health education messages on the importance of breast care and shown how to do self-examination. Those who had an abnormal finding at clinical examination were referred to the hospital for examination by mammography or for biopsy. They were reassured that whatever treatment they needed would be free.

In this first trawl, 291 women were referred to the

Italian Hospital and 20 women were diagnosed with cancer – a rate of eight per 1,000 women who attended for breast examination. This very high rate is not the incidence of cancer, since it included cancers that had developed over a number of years, but it destroys the myth that breast cancer is only a disease of affluent Westernised women. These women from a poor part of Cairo would normally have been considered ‘low risk’ for breast cancer. Their mean age of marriage was 20.5 years, the mean age of first birth was 21.8 years, 95% had been through one or more pregnancies and 45% had four or more children.

A high number of women – 55 out of 291 referred – did not attend the Italian Hospital despite an abnormal finding. In the second phase strenuous efforts were made to contact these 55 women and encourage them to come forward. Some would not open their doors to social workers. Only 20 were persuaded to attend hospital, and four of these were found to have breast cancer, all with advanced disease.

Gadallah believes that the women who dropped out did not understand the seriousness of the disease or the potential benefits of treatment, or were too frightened. “They knew they had something. The doctor who examined them said there is something wrong with your breast, and you need to go to the Italian hospital to be examined.”

Boulos believes there are also a few cases where family pressure was the deciding factor. “We had two cases where the women were under pressure. Both of them died. The first woman's daughter brought her in quite early in the disease. She had been living with her son who had refused to accept the concept of having a sick person in the house. In another case, the



Anthony Miller: skilled breast examination can find as many poor prognosis cancers as mammography



Salwa Boulos: family pressure sometimes prevents women from seeking early treatment

woman presented at a very late stage. The husband refused completely to allow his wife to go.”

The only deaths known to have occurred in the study have been of women who at first refused to go to the hospital. Nobody knows what the outcome has been for the 35 women who have still not attended.

Phase 2 began in 2001. The original group was randomly divided by area into A and B. Women living in A areas were invited back for a further clinical breast examination and were reminded about how to conduct self-examination. Again those with suspicious findings were referred to the hospital.



Indraneel Mitra: you have to screen many women to detect one cancer and you have to pay huge attention to detail

In 2003, women in Group B areas were visited by social workers who administered a questionnaire to see whether they had noticed any breast problems. These women were the control group since they were not invited for screening, but any who disclosed a problem to the social worker were invited to the hospital for a mammogram.

The pilot confirmed that young female doctors can detect breast cancers by screening. Miller believes that a study with sufficient power (number of women and length of screening) would show a mortality benefit. “What I think we will find in the end is that the incidence in this

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of having a sick person in the house”

relatively young age group is 1.5 to 2 per thousand women, which is still high, but we have recognised that in North Africa there is quite a lot of breast cancer.”

The number of women who refused further examination was a concern. However, there was a greater willingness to take part in Phase 2. Boulos said: “The word spread about what we were doing and women had a greater confidence.” Gadallah intends to explore the reasons for women refusing investigation, to encourage women that hope from treatment should outweigh fear of the disease. The pilot continues in a new area of Cairo with another 5,000 women.

The next step will be taken in the Yemen. Miller is preparing a protocol after discussing the project with key staff at Kuwait University Hospital in Sana. “There are people there who are expert in oncology and interested in breast cancer, so there is a base for capacity building,” he said. Young female doctors will be trained in breast examination and radiologists will receive mammography training. He hopes that in the Yemen it will not be necessary to do a ‘Phase 1’ and they can proceed from the start with a control group and a study group.

Khadija Al Huraibi, a gynaecologist at the Kuwait University Hospital, is anxious to start as soon as possible. “We met the social workers and the young doctors. The social workers already have experience in going door to door. Our community is a little bit different from Egypt. Women visit each other and are often grouped together in the day. We have the chance to meet 50 women together.”

Sudan also wants to test this method of screening. Ibrahim Elfadil, from the National Institute of Oncology in Khartoum, said that breast cancer accounts for 75% of cancers reported in women and survival rates are poor because of late diagnosis.

There is only one specialist centre in the

country. He said that the point of doing a pilot would be to establish that an early detection programme was feasible and socially acceptable.

Cultural factors in each country must be addressed for screening to work, to ensure that women attend for examination and for follow-up care. Ethical questions also have to be addressed. If clinical breast examination is known to be effective, is it ethical to conduct a trial where half the population in the study does not receive it? However, effectiveness has not yet been demonstrated in a low-income country. Moreover, the control group receives education about breast care and self-examination so that these women are better placed to detect cancer early than women in the general population.

It is essential that treatment is available and accessible when cancers are discovered, which means that it must be free or heavily subsidised for low-income women. Miller says: “There is no justification in going out to look for cancers and introducing early diagnosis unless we can offer treatment.” The pilots include free treatment, but this would clearly become an issue if screening programmes were introduced on a larger scale.

None of these pilots has yet shown the impact on mortality reduction, but it is possible that in a few years’ time a meta-analysis embracing India, Egypt, the Yemen and Sudan could give the answer. If this is an effective method of early detection and it does save lives, it could cause rich and poor countries alike to consider whether mammography is the only route.

Miller is already sceptical of the cost-benefits of mammography. “The costs of training and continually doing the screening, and the cost in terms of women found to be abnormal by mammography but found not to have invasive breast cancer, are all very high. Mammography does not find poor prognosis cancers that cannot be found by breast examination if that examination is good.”

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