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Source: The Straits Times, B14-15
Date: 9 June 2018

US findings may help breast cancer patients here avoid chemo

Study shows that the treatment is not needed after surgery in some early-stage cases

Low De Wei

Hundreds of breast cancer patients each year in Singapore will be able to avoid chemotherapy when having their condition treated. And that is just at the National Cancer Centre Singapore alone.

This estimate, by Dr Yap Yoon Sim, senior consultant at the centre's division of medical oncology, comes after findings from a US study published recently showed that some early-stage breast cancer patients do not need chemotherapy after surgery.

The results, which generated significant buzz after they were released at the American Society of Clinical Oncology on Sunday, showed that for women with a type of early-stage breast cancer, treatment with chemotherapy and hormone therapy after surgery is not more beneficial than treatment with hormone therapy alone.

Up to 70,000 patients in the United States will be able to avoid chemotherapy every year following the groundbreaking Trial Assigning Individualised Options for Treatment (Rx), or TAILORx trial.

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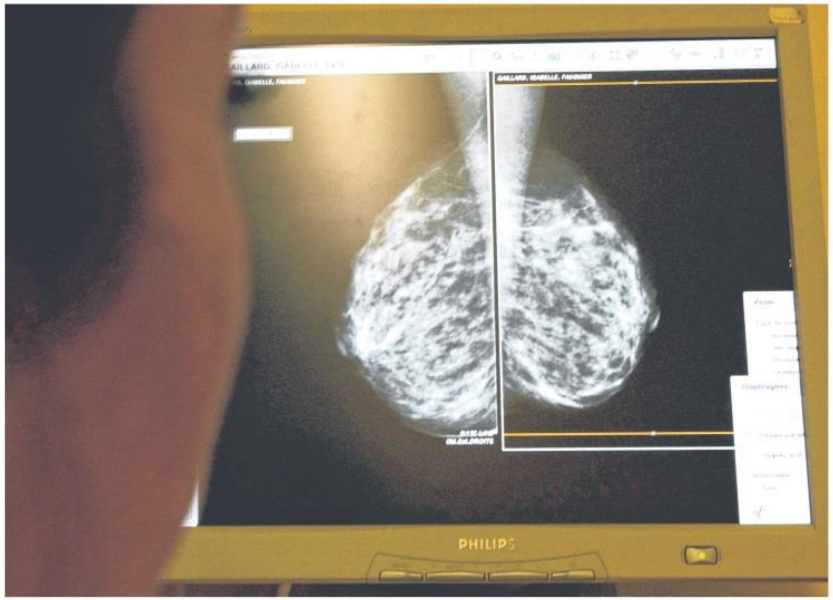

A doctor in France examining a mammogram. The TAILORx results will help provide more individualised breast cancer care, says Tan Tock Seng Hospital's Dr Juliana Chen.
PHOTO: REUTERS

Doctors in private and public hospitals here noted that the test, Oncotype DX, which was used in the study to assess the need for chemotherapy, is already routinely recommended for eligible patients here. The Oncotype DX test analyses the activity of a group of genes that can affect how a cancer is likely to behave and respond to treatment.

Dr Andrea Wong, a consultant in the department of haematology-oncology at the National University Cancer Institute, Singapore, said the Oncotype DX test has been available in public hospitals here for six years.

At Raffles Cancer Centre, Dr Lynette Ngo, a medical oncology specialist and consultant there, noted that the centre has been offering it for "more than five years".

But doctors advised breast cancer patients to moderate their expectations.

"Not all patients will benefit... The test also does not preclude everyone from needing chemotherapy," cautioned Dr Juliana Chen, head of the breast surgery service at Tan Tock Seng Hospital.

The US study zeroed in on a group of patients suffering from Stage I and II breast cancer, whose cancer has not spread to the lymph nodes.

Those with a subtype of cancer, also known as Luminal A, often have slow-growing cancer tumours that are unlikely to return after removal. To prevent recurrence, patients undergo hormonal therapy, which involves taking medication that blocks or reduces hormones that can drive cancer growth.

Doctors traditionally advise patients to undergo chemotherapy treatment concurrently, which involves using drugs to kill or stop rapidly dividing cancer cells.

But this often comes with unpleasant side effects such as mild nausea, vomiting, hair loss, lethargy and loss of appetite.

While new drugs have reduced the harshness of chemotherapy, this does not remove the time sacrifices and emotional stress patients who undergo chemotherapy may experience, said Dr See Hui Ti, senior consultant in medical oncology at Parkway Cancer Centre.

In recent years, doctors have become "increasingly aware" that not all patients suffering from such breast cancers will benefit greatly from chemotherapy, said Dr Wong.

Genomic tests that use a biopsy sample (see graphic) to measure the activity of genes that cause cancer growth, have been developed to address this issue.

One of the approved tests here, Mammaprint, assigns a "high risk" or "low risk" score based on the activity of 70 genes. Low-risk patients are advised that undergoing chemotherapy yields few benefits.

A study conducted from 2007 to 2011 among 6,693 eligible breast cancer patients further proved that more patients may be able to avoid chemotherapy. Up to 46 per cent of breast cancer patients identified as having a high risk of recurrence did not receive any significant benefits from chemotherapy, it found.

The genomic test in the spotlight, Oncotype DX, tests 21 genes instead, and gives a numerical score of up to 100.

Earlier clinical trials have shown that eligible patients with a score below 18 have a low risk of cancer recurrence and do not need additional chemotherapy treatment.

But those who scored between 18 and 25 did not have conclusive test data in the past. This "grey ambiguous zone" left patients none the wiser about making treatment decisions, as there may be some, but not a lot of, benefits to undergoing chemotherapy, said Dr Ngo.

The test is also not cheap.

Dr Ngo said that the cost of undergoing an Oncotype DX test currently hovers between $5,000 and $7,000.

The cost is high because the sample tissue has to be sent overseas for sampling, explained Dr Chen. This means that cost has always been and still is an issue, she said. The Straits Times understands that this test is not subsidised in public hospitals here.

This lack of evidence at the early stage, coupled with high cost, meant that the test was not actively pushed for patients here, Dr Chen added.

But the US study has just proven that most of the women above 50 suffering from such non-aggressive early-stage breast cancers would not experience significant benefits from going through chemotherapy.

While chemotherapy is still recommended for patients below 50 with such mid-range scores, such results are "practice changing" in Singapore, said Dr Wong. As doctors here anticipate a rise in the number of eligible patients who will opt for these tests, they note that this is part of a broader trend in the medical community towards more individualised cancer care.

This, explained Dr Chen, is what the TAILORx results will help to provide, by giving doctors more tools to predict patient responses to treatment, and better advise on treatment measures.

The assurances the study provides to patients facing an unknown future brought about by breast cancer are what make such studies worth promoting, said Dr See.

The most rewarding experience, she added, is when patients who have undergone surgery know they do not need to undergo chemotherapy. "You should see their faces when that stone is lifted from their heart," she said.

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NEED TO MODERATE EXPECTATIONS

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Battling breast cancer

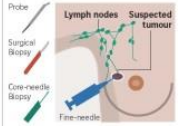
Tests now allow for the better classification of cancer types and identification of the best treatment options

DETECTION

Women should undergo various tests, depending on their age, including mammograms and other breast examinations.

TESTING

During a biopsy, tissue samples are taken from the area where cancer cells are suspected, using a needle, probe or minor surgery, and examined under a microscope.



Once cancer is confirmed, treatment is based on factors such as:

- Tumour size,
- Whether the cancer is present in the lymph nodes (under the armpit),
- Whether the cancer has spread beyond the breast area,
- Receptors – proteins found in and on breast cells that can lead to cancer growth after picking up hormone signals.

MOLECULAR SUBTYPES

Genomic tests assess how the cancer will behave, allowing doctors to better advise on treatment needs. There are four major breast cancer subtypes:

Subtype of breast cancer	Proportion of breast cancers	Best treatment
Luminal A	30-70%	Hormonal therapy, chemotherapy not beneficial in most cases
Luminal B	10-20%	Mixture of chemotherapy and hormonal therapy
HER 2 Positive	15-20%	Targeted therapy, chemotherapy is also useful
Triple Negative	10-20%	Chemotherapy

AVOIDING CHEMOTHERAPY

Recently, there has been much interest in how to accurately identify patients with **Luminal A cancer** who can forgo chemotherapy. This is done through genomic tests, which test biopsy or tumour samples for genes that affect cancer growth. Two common tests here are:

- Oncotype DX – Tests the activity of 21 genes that can influence how likely a cancer is to grow and respond to treatment.
- Mammaprint – Tests the activity of 70 genes and then calculates a recurrence score that is either low-risk or high-risk. Low-risk patients are unlikely to benefit from chemotherapy.

TREATMENT

Surgery is usually done to remove the tumour along with a margin of normal breast tissue, or to remove the entire breast. As follow-up or initial treatment, some patients have to undergo:

- Targeted therapy (taking certain drugs)
- Radiotherapy
- Hormonal therapy
- Chemotherapy

Sources: Breastcancer.org, National Cancer Institute, Canadian Cancer Society, National University Cancer Institute, Singapore, Susan G. Komen, Parkway Cancer Centre
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