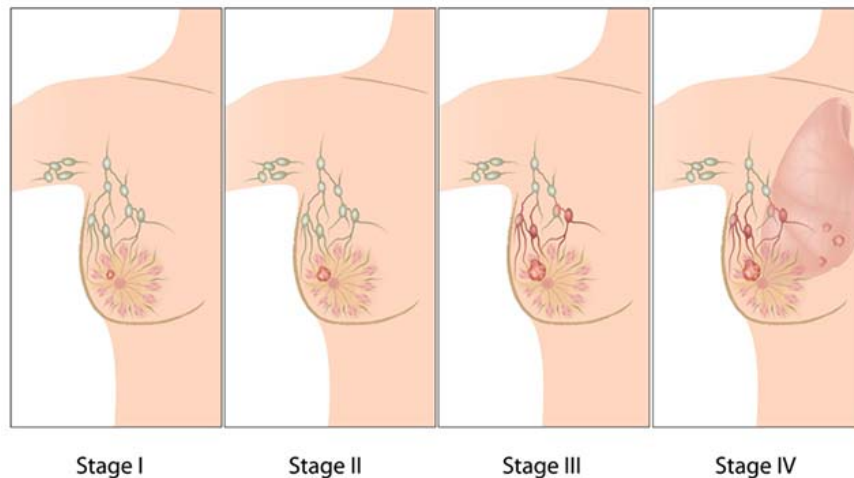


IBM researchers analyzed breast cancer cell structure with AI

Breast cancer is the most common and deadly cancer for women in many countries around the world, along with lung cancer and colorectal cancer.

Breast cancer is the most common and deadly cancer for women in many countries around the world, along with lung cancer and colorectal cancer. According to the International Agency for Research on Cancer (IARC) in 1998, breast cancer ranked first, accounting for 21% of all types of cancer in women worldwide. The latest studies show that 1 in 8 adult women will have invasive breast cancer throughout their lives, and according to the World Health Organization, there are 18.1 million new cases, and 9.6 million breast cancer deaths worldwide last year. So it can be seen that breast cancer is really a serial killer, with a very complex coping mechanism that for many years there have been countless studies on the causes, pathogenesis and direction of treatment, But the results are still relatively limited.



1. Improve the effectiveness of assessing depression status by AI models

Currently, early detection of breast cancer through screening in normal women significantly improves the prognosis and overall treatment outcomes, and fortunately, efforts are underway at Google, MIT and NYU to improve the accuracy of breast cancer screening by artificial intelligence technology have gained commendable successes, opening up the potential for breast cancer screening in the effective community. more pronounced. Another big man in the field of artificial intelligence - IBM - is the latest name involved in the fight against breast cancer. In a blog post yesterday, scientists at the IBM Zurich office in Switzerland detailed their cooperation project with the University of Zurich to develop a system based on artificial intelligence, can identify and classify tumors, immune cells as well as the relationship of these components. The details of this

study are published in the famous scientific journal Cell.

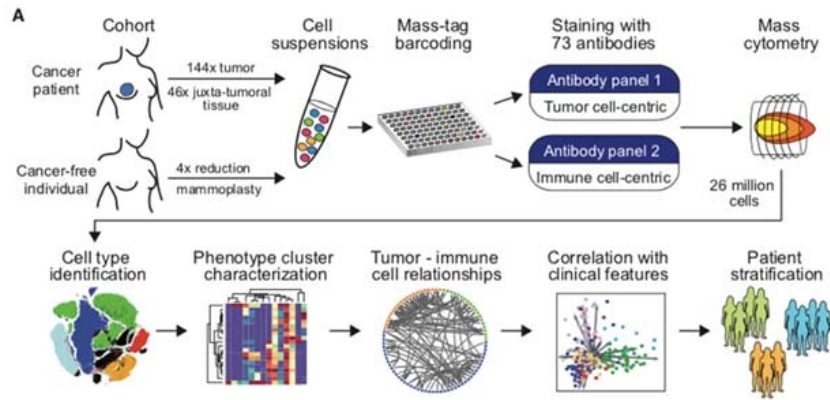
'Although researchers and doctors around the world have worked tirelessly to develop new therapies to fight breast cancer, after all, the main reasons why Cancer-related deaths are still drug resistance, relapse and metastasis. Our goal in this project is nothing more than laying the foundation for future diagnostic and screening methods, potentially helping patients to win a higher percentage of the battle against This evil disease,' said Marianna Rapsomaniki, head of IBM's research team.



1. Google AI application in detecting eye diseases

To that end, Rapsomaniki and her colleagues first hypothesized that breast cancer is a heterogeneous group - meaning that it includes tumor cells with Characteristics are determined by genetic structure and effects through communication environments as well as interactions with non-cancerous cells in the body such as immune cells (immune cells), fibroblasts (stromal cell), and vascular cell. In addition, scientists also added a hypothesis that factors in these 'ecosystems' may be related to disease progression and ability to respond to therapy.

To demonstrate their idea, the team selected non-tumor samples from 144 patients and used mass cytometry - a variation of the analytical method. Flow cytometry - to analyze and measure about 70 proteins in more than 26 million cancer cells and immune cells. Next, they used an AI-based technique to identify different tumor and immune cell populations, then created a detailed diagram of the 'breast cancer ecosystem', and used Use this chart to determine the heterogeneity of individual tumors, as well as quantify their abnormality compared to non-tumor cells.



1. MIT AI model can capture the relationship between objects with the minimum amount of training data

Finally, the researchers analyzed the macrophages and T-cell populations associated with tumors (these cells can express both inhibitory function as well as tumor support), and then, link the findings with other clinical information including the degree of the disease or the extent of the tumor invasion.

After completing the experimental steps, the team found that malignant tumors are often dominated by a single tumor cell morphology, and each tumor is unique in the cell composition. of it, in which the malignant tumors are often different from the rest. In addition, scientists have found similarities in the immune system involving tumors, between malignant tumors.

The team believes that this work will contribute to laying the foundation for the design of precise medical treatments and suggesting that immunotherapy may be a feasible method of early diagnosis of one. number of breast cancer patients.



1. Japan's artificial intelligence has created ultra-realistic virtual fashion models

'Through research, it can be seen that an approach suitable for all cancer treatments is not always effective. Based on recent findings, we believe that a particular group of breast cancer patients may also benefit from immunotherapy for their treatment. In the future, we will further explore the feasibility of immunotherapy in additional studies, potentially leading to a large-scale clinical trial, 'concluded Marianna Rapsomaniki.

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