MedicalXpress

New algorithm helps select patients for urgent surgery or chemotherapy during pandemic

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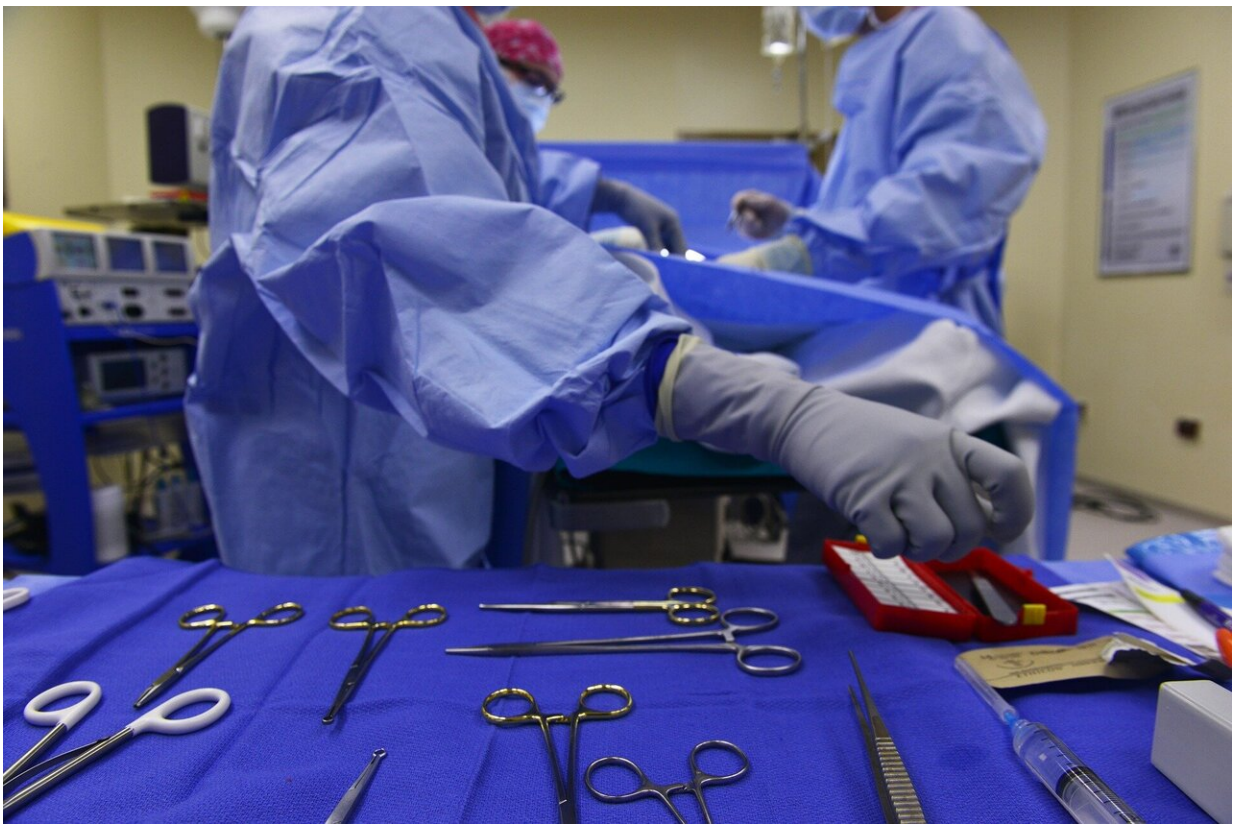

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A new approach to better select breast cancer patients in need of urgent surgery or chemotherapy during the COVID-19 pandemic has been

developed by researchers at The Royal Marsden and the Breast Cancer Now Research Centre at The Institute of Cancer Research, London, in collaboration with colleagues in the UK, Germany and US.

The innovative algorithm, using data from multiple international trials, can identify postmenopausal patients with primary ER+HER2- breast cancer (c.70% of cases) who have less endocrine-sensitive tumors and who should be prioritized for early surgery or neoadjuvant chemotherapy.

The COVID-19 pandemic has led to an international need to prioritize the number of cancer surgeries and chemotherapy treatments to the most urgent patients to protect staff and vulnerable patients. While patients diagnosed with triple negative and Her2 positive breast cancer have still been going forward for urgent surgery or chemotherapy, for a large group of patients deferring these treatments and prescribing neoadjuvant endocrine therapy (NeoET), i.e. treatment to reduce the stimulation of the disease by estrogen without the surgical removal of the breast tumor, has been identified as the best course of treatment.

Development of the new treatment algorithm was led in the UK by researchers working in the Ralph Lauren Centre for Breast Cancer Research at The Royal Marsden and the Breast Cancer Now Toby Robins Research Centre at The Institute of Cancer Research (ICR).

Professor Mitch Dowsett, Head of the Ralph Lauren Centre for Breast Cancer Research at The Royal Marsden and Professor of Biochemical Endocrinology at the ICR, led the collaboration published in *NPJ Breast Cancer* this week. The work highlighted that while 85% of patients in whom treatment by surgery is deferred would be safe to remain on NeoET treatment for up to six months, 15% can be identified who are resistant to this treatment and risk disease spread.

Professor Dowsett said: "NeoET can block the tumor from growing successfully for many women but for one in six who are resistant there is a risk the tumor will continue to grow and spread elsewhere.

"By accessing unpublished results from clinical trials involving thousands of patients, with colleagues here and abroad we have developed a new way of directing patients' treatment in this global crisis. Using the data on estrogen receptor, progesterone receptor and proliferation from the tumor of newly diagnosed patients, our simple new calculator can be used by fellow clinicians worldwide to immediately identify the best course of treatment for about 80% of their patients.

"Then, by drawing upon our earlier research, we can help the other 20% by measuring Ki67 (a protein that measures the number of cells dividing in the tumor) a few weeks after starting their NeoET. Overall, we can identify the 15% of the women who are most at risk of relapsing on just NeoET treatment and should be prioritized for surgery or neoadjuvant chemotherapy.

"The speed and openness of this collaboration to help our patients as rapidly as possible has been unparalleled in my 30 years' experience."

Consultant Breast Surgeon at The Royal Marsden, Peter Barry said: "It is important we treat as many patients that require urgent treatment /surgery as safely as possible during the COVID-19 pandemic. This innovative algorithm will help clinicians offer the best treatment for their patients during these unprecedented times. I have already identified patients that would have been deferred to receive NeoET, that may well have been at risk of progression within the six months."

Baroness Delyth Morgan, Chief Executive at Breast Cancer Now, said: "It's fantastic that this approach could help guide the best possible

treatment for thousands of NHS breast cancer patients during the pandemic, and could also now help inform best practice globally.

"This landmark guidance could now help to identify women that must be prioritized for surgery or chemotherapy urgently, and those that could safely be given hormone therapy to delay further treatment during the pandemic. It is a real testament not only to UK science but to the rapid collaboration of researchers globally to help ensure breast cancer patients can get the best possible care while minimizing the risks to them at this time."

More information: Mitch Dowsett et al. Evidence-based guidelines for managing patients with primary ER+ HER2− breast cancer deferred from surgery due to the COVID-19 pandemic, *npj Breast Cancer* (2020). DOI: 10.1038/s41523-020-0168-9

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