

## Breast Cancer Research: New Approaches

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### DESCRIPTION

It is easier to create novel medicines for common diseases than for rare diseases since more patients can be enrolled in clinical trials. The only method to create safe, effective medicines for any disease is through clinical trials. Since breast cancer is so common, hundreds of women have volunteered for cancer clinical trials, allowing for the development of numerous new treatments. These clinical studies have led in a rapid improvement in therapy options for breast cancer patients.

### Surgical treatment has progressed

Since the first mastectomy over a century ago, surgical treatment has evolved. Breast surgery is becoming less invasive, and some treatments no longer necessitate an overnight hospital stay. The original radical mastectomy was replaced by a more limited mastectomy, and now lumpectomy can be performed in many cases with the addition of radiation. Lumpectomy only eliminates the lump, leaving the breast alone. Less invasive lymph node removal procedures have been developed to alleviate chronic arm pain and edoema following surgery. The results of a clinical trial in Europe on this sentinel lymph node operation were favourable, and a second clinical trial in the United States will be published in the coming years. This less invasive lymph node surgery may become the norm in the near future.

### New chemotherapy is boosting patient care

Many breast cancer patients will recur following surgery. The first evidence that chemotherapy could minimise relapses appeared in 1976, and various chemotherapy mixtures have produced even better results since then. Newer chemotherapy has also expanded our therapeutic options for individuals who have relapsed. Epirubicin, gemcitabine, navelbine, and xeloda

are some of the newest medications. Treatments are likely more successful if administered every two weeks rather than every three weeks, albeit there are greater adverse effects. This is known as dose-dense treatment, and it necessitates further injections to prevent low blood counts.

### New approaches to increase efficacy and decrease size impacts

Another method is to combine new additives with older medications to reduce negative effects while increasing efficacy. Liposomes, which are tiny lipid particles, have been added to the older medicine Adriamycin to reduce negative effects while preserving effectiveness. The Food and Medication Administration just approved Abraxane, a new drug for breast cancer. Abraxane is created by combining albumin with Taxol, an older medication, resulting in a more effective treatment with fewer adverse effects.

Another fascinating topic is hormone therapy, which has numerous new medications on the market. Tamoxifen has been overtaken by newer medications known as aromatase inhibitors, which include arimidex, femara, and aromasin. These medications can cure recurrent breast cancer better than tamoxifen and minimise relapses following surgery, but they are only effective in menopausal patients. Faslodex is another novel medicine that has the potential to be even more effective than aromatase inhibitors.

Herceptin is another promising medicine that treats a kind of breast cancer known as Her-2-Neu positive. It is a technological product that binds to and destroys breast cancer cells on their surface. Herceptin, either alone or in combination with chemotherapy, is successful in recurrent breast cancer and is being studied for relapse prevention in patients who have had surgery.

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