

The Future of Chemoprevention Research

Key Points

- Scientists are currently testing many types of chemopreventive agents in large clinical trials.
- The STAR trial has shown successful results of the drugs tamoxifen and raloxifene in lowering breast cancer risk in postmenopausal women who are at increased risk of the disease.
- Current medical practices may play a role in the future of chemoprevention.

1. What is the outlook for chemoprevention?

The field of chemoprevention research is exciting and promising. Many doctors and researchers hope advances in chemoprevention will prevent cancer from forming, progressing, or recurring. Several chemopreventive agents are under development right now that are safe, are easy to use, and are lower in cost than cancer treatment.

Scientists are currently testing several types of chemopreventive agents in large scale clinical trials with human subjects. More information about these trials may be found on the National Cancer Institute clinical trials web site (<http://cancer.gov/clinicaltrials/search>), and the National Institutes of Health clinical trials web site (<http://clinicaltrials.gov>).

2. Are there any successful chemopreventive agents for people at high risk for cancer?

Examples of successful chemopreventive agents are the hormonal drugs used in patients with early stage breast cancer. These drugs have been shown to help stop cancer from coming back once it has been treated.

A clinical trial called the Study of Tamoxifen and Raloxifene (STAR) is one of the largest breast cancer prevention studies to date. It studied how the drug raloxifene compares with the drug tamoxifen in lowering the rate of breast cancer in postmenopausal women at increased risk of the disease. The results of STAR show that raloxifene and tamoxifen are both able to reduce breast cancer risk by half for these postmenopausal women. More information about STAR may be found on the National Cancer Institute web site (<http://www.cancer.gov/clinicaltrials/digestpage/STAR/page2>).

Please note, the U.S. Preventive Services Task Force suggests that doctors talk to women before they make any decisions about chemopreventive agents. Doctors should tell women about any possible benefits and harms. The balance of benefits and harms may be favorable for some women who are at high risk for breast cancer. Women should consider certain factors such as cancer risk, risk for harmful effects of chemoprevention, and personal preferences before making any medical decisions.

3. What current medical practices may help chemoprevention?

Cancer screening may work hand-in-hand with chemoprevention medicine. Cancer screening looks for early signs of a particular cancer in healthy people who do not have any symptoms. Screening helps doctors find cancers at very early stages when they are the easiest to cure. If doctors can screen high-risk people for cancer and catch tumors early, then chemoprevention may stop the tumors from growing or get rid of cancer cells entirely.

Genetic testing may also play a key role in chemoprevention medicine. Genetic testing is a medical test that determines a person's chance of getting or passing on an inherited disease. If doctors can test people who are at high-risk for getting certain cancers due to family history, then chemoprevention may help stop cancer cells from forming in the first place.

4. What are the future challenges of chemoprevention?

Despite the early promising discoveries in cancer chemoprevention, scientists face many challenges in this field of research. Financial, regulatory, and legal barriers make the investment of time, talent, and money in this field challenging. The size and length of clinical trials required to properly test chemoprevention drugs require large levels of funding. Reimbursement for new drugs is uncertain. The drug approval process of chemopreventive agents is uncharted. Limits in patent protection prevent companies from recouping their investment in the long term research required to discover these drugs.

In order for researchers to serve patients best, they need to create a clear picture of which agents will work to prevent cancer. Researchers must also determine which people will respond best to chemoprevention medicine.

Sources:

Herberman, R.B., et al. *Cancer Chemoprevention and Cancer Prevention Vaccines-A Call to Action: Leaders of Diverse Stakeholder Groups Present Strategies for Overcoming Multiple Barriers to Meet an Urgent Need*. Cancer Research 2006; 66.

National Library of Medicine
http://ghr.nlm.nih.gov/handbook/testing/genetic_testing

The Ohio State University Comprehensive Cancer Center (OSU CCC-James)
<http://www.jamesline.com/news/publications/frontiers/archives/?ID=1409&CID=0>

U.S. Preventive Services Task Force
<http://www.ahrq.gov/clinic/3rduspstf/breastchemo/>

The University of Texas M.D. Anderson Cancer Center
http://www.mdanderson.org/patients_public/prevention/display.cfm?id=f2e19e2e-88d4-493c-a34b65ce0cdfff7d&method=displayfull#trends

Related Resources:

National Cancer Institute
Telephone: 1-800-4-CANCER
Web site: <http://www.cancer.gov>

American Cancer Society
Telephone: 1-800-ACS-2345
Web site: <http://www.cancer.org>

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