Advanced Therapies Aimed At Cancer

Marilynn Marchione, AP
New research shows a sharp escalation in the weapons race against cancer, with several high-tech approaches long dreamed of but not possible or successful until now. At a weekend conference of more than 30,000 cancer specialists, scientists reported:

- New "smart" drugs that deliver powerful poisons directly to cancer cells while leaving healthy ones alone.
- A new tool that helps the immune system attack a broad range of cancer types.
- Treatments aimed at new genes and cancer pathways, plus better tests to predict which patients will benefit from them.

"I see major advances being made in big diseases, such as breast and prostate cancers," said Dr. Richard Pazdur, cancer drug chief at the federal Food and Drug Administration, which on Wednesday announced a new policy intended to speed breast cancer drugs to the market. The field continues to move toward more precise treatments with fewer side effects and away from old-style chemotherapy that was "like dropping a bomb on the body," he said. In fact, an emerging class of "smart bombs" was one of the most hopeful developments reported at the meeting of the American Society of Clinical Oncology.

These are two-punch weapons that combine substances called antibodies, which bond with specific cancer cells, and toxins that are too potent to be given by themselves. A chemical link holds them together until they attach to a tumor cell, releasing the poison inside it and killing the cell. "This is a classic example of the magic bullet concept first proposed more than 100 years ago but only now possible with advances in technology," said Dr. Louis Weiner, director of Georgetown Lombardi Comprehensive Cancer Center."The antibody basically targets this very toxic drug right to the cancer cell and places it inside the cancer cell where the drug can do its damage without harming healthy cells nearby," he said.

One large study showed that one such drug — Genentech's T-DM1 — delayed the time until cancer got worse in women with very advanced breast cancer. The drug also seems to be improving survival, although it will take more time to know for sure. So far, women on the new treatment were living more than a year longer than a comparison group of women who were given two other drugs. Dozens of similar "smart bomb" drugs are in development. Pfizer Inc. is testing one for certain types of lymphoma and leukemia. Only one such drug is on the market now — Adcetris, sold by Seattle Genetics, Inc. for some less common types of lymphoma.

The other big news at the conference involved a very different approach: using the immune system to fight cancer. For more than a century, doctors have been trying

to harness its power, but tumor cells have cloaking mechanisms that have kept the immune system from recognizing them as an enemy and going on the attack. Bristol-Myers Squibb Co. has developed two drugs — one aimed at cancer cells and the other at key soldier cells of the immune system — to remove one of these invisibility cloaks. Two studies involving nearly 500 people found some tumor shrinkage in up to one-quarter of patients with lung and kidney cancers as well as the deadly skin cancer, melanoma. The treatments had less impact against colon and prostate cancer.

These are only early results — not survival comparisons or definitive tests, doctors warn. More testing is needed to even establish safety. In one study, three patients died of a lung inflammation considered due to the treatment. However, ordinary chemotherapy can prove fatal, too, said one study leader, Dr. Julie Brahmer of Johns Hopkins University. "There were a few patients who had a complete remission from the immune system treatments, and most patients suffered few side effects," she said. "It's great to see patients feeling well. They don't have hair loss, they don't have a drop in blood counts and are not as prone to infections."

Dr. Roy Herbst, medical oncology chief at Yale Cancer Center in New Haven, CT was hopeful. "I haven't seen anything this good for many years for treating lung cancer," he said. "I'd be very surprised if there wasn't some benefit on survival," said Herbst, who has consulted for the drug's maker. Other doctors, including Pfizer's cancer drug development chief, Dr. Mace Rothenberg, noted progress on new diagnostic tests to predict which drugs will work for which patients. Cost, time and difficulty have kept many of them from being practical in everyday settings for cancer patients, but "a lot of these barriers are falling," Rothenberg said.

"Every time we say 'this technology is five to 10 years off, we've been wrong and progress has come sooner," he said.

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