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Italian gene therapy player draws new investor from China for its answer to CAR-T relapses

by Jason Mast on September 10th, 2019

So you've been treated with one of the new-age cancer therapies. What do you do if there's a relapse and the tumors returns?

Genenta Science launched four years ago out of Milan in part to answer that question, and today they received $14.4 million in round three funding that will propel their unique gene therapy through Phase I/II trials for multiple myeloma and glioblastoma. Backed now by money from the Chinese firm Qianzhan Investment Management and Fidim, the former owner of the biopharmaceutical Rottapharm, the company is also exploring ways of delivering gene therapy to solid tumors that have been harder to reach.

"The problem Genenta faces is that you don't need to be Nobel Prize brain to understand CAR-T," CMO Carlo Russo told *Endpoints News*, referring to the popular cancer cell therapy. "It is intuitively simple. What we are trying to do is not."

CAR-T treatments have been hailed in recent years for the breakthroughs they've offered in hard-to-treat blood cancers, but initial enthusiasm has been tempered by 1-year relapse rates as high as 40%.

The idea of the Genenta therapy, called Temferon, is to prevent those relapses by rebuilding the patient's immune system within the tumor sites themselves, called TEMS. The treatment involves injecting a lentivirus for a gene transfer in hematopoietic stem and progenitor cells, triggering -interferon-αexpression in the targeted areas. The patient would then be able to fight off future relapses.

This therapy has exciting potential for long term care, Russo said, but not necessarily for tackling a fast-acting cancer. He said he could envision a future where frontline remedy such as CAR-T or chemotherapy is used to wipe out tumors early and then Temferon is administered for long term prevention.

"It's like a vaccine," Russo says, "You're exposed to an antigen so you will be prepared when you are naturally exposed to the antigen."

The multiple myeloma and glioblastoma trials have already begun, Genenta CEO Pierluigi Paracchi told Endpoints, and the funding will allow them to expand to 21 and 9 patients in each. Paracchi said they may also look into using parts of the funds to open a clinical trial in the United States.

Genenta's preclinical work, led by Luigi Naldini, examined Temferon on an array of cancers; multiple myeloma was chosen for the first clinical trial in large part because bone marrow transplants are already part of the disease's standard of care, reducing the risk of the experimental therapy.

Like CAR-T, Temferon works by removing bone marrow cells, treating them with a gene therapy and then reinjecting them into the patient. But Genenta method uses interferon, an old cancer treatment that has been all but discontinued because of its risks.

"The reaction I get when I talk about interferon is 'oh my god this is such an old, boring drug,'" Russo said.

But because the therapy limits the interferon proteins to the micro-environment around the tumor, it can be effective and low-risk, Russo said.

Among other benefits, the study on glioblastoma will allow researchers to see in the very near future if the treatment is having any effect, as this form of brain cancer is generally fatal within 16 to 20 months.