FDA ODAC recommends Approval of Novartis’s CTL019

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On Wednesday, July 12, 2017, a U.S. Food and Drug Administration advisory committee unanimously (10-0) recommended approval of Novartis Pharmaceutical's T-cell therapy for acute lymphocytic leukemia. The voting question was “Considering the efficacy and safety results of [the pivotal study], is the benefit-risk profile of tisagenlecleucel favorable for treatment of pediatric and young adult patients (age 3-25 years) with relapsed (second or later relapse) or refractory (failed to achieve remission to initial induction or reinduction chemotherapy) B-cell precursor acute lymphoblastic leukemia (ALL)?” This represents a huge milestone in cell therapy: the product is now on its way to FDA approval. Our ISCT President, Catherine Bollard, MD MBChB, was a voting member of the FDA Oncologic Drugs Advisory Committee

I was present at the FDA meeting from start to finish sitting next to Carl June with whom I’ve been working on T cells since 1992. We first began working on CAR T cells, in HIV, in a clinical trial collaboration with Cell Genesys in the 1990s. I am forever grateful that he gave me the opportunity to research, develop, and see to fruition this therapy. During the day at the FDA, I saw the mother of a patient testify to the committee that even though her 6-year-old daughter initially responded and ultimately passed away from CD19 negative leukemia, she was thankful for the extra months and urged the committee to vote to approve for the benefit of other children. I saw Don MacMahon, father of Connor treated at Duke in the Novartis trial, give powerful testimony on the six years of chemo he had endured over 12 years since initial diagnosis and 3 relapses - and compared that to his CAR T cell treatment. He ended his testimony saying “Please, for the sake of children, not only in the US, but for those all over the world that follow the wonderful example of the United States and our world class healthcare, please adopt and approve CAR-T cell therapy. That is truly Connor’s Hope.” I saw Tom Whitehead, father of Emily Whitehead the first child ever to be treated with CAR T cells, tell the story of Emily’s diagnosis and treatment. In the middle of his presentation, Emily walked up to be by his side. He said to the committee through tears, “If you want to see what a cure from leukemia looks like, she is standing right next to me.”
I saw a vote flash up on the screen in front that was unanimous for approval, and heard a collective “Wow!” from the audience of several hundred. I heard one of the Advisory Board members, oncologist Tim Cripe from Nationwide Children’s in Columbus OH say, “I think this is most exciting thing I’ve seen in my lifetime.”

Because the Novartis application was granted a “Special Protocol Assessment”, the FDA is expected to provide a final decision on approval (or not) by October 4. This is 6 months after the FDA initially accepted the Novartis Biologics License Application as being complete enough for them to review. The decision may come sooner. Kite Pharma has a BLA submitted to the FDA for CAR T cells directed against CD19 in Non-Hodgkin Lymphoma (axicabtagene ciloleucel) that was granted FDA Priority Review, with a target action date of November 29, 2017. Novartis expects to submit an application for market authorization with the European Medicines Agency (EMA) later this year in pediatric ALL and file with the FDA for Non-Hodgkin Lymphoma in the same timeframe. There are now approximately 40 companies around the world investigating gene redirected T cells or NK cells.

Here is some of the coverage of this momentous occasion:

Philadelphia Inquirer • The New York Times • The Washington Post • NPR • Reuters • Wall Street Journal • TIME • NBC News • NBC Nightly News (Clip) • CBS News • Associated Press via ABC News • STAT News • Nature • Fortune • The Hill • Endpoints News • HealthDay News via WebMD • New York Daily News

FDA Public Information is available here:

Draft Agenda • Draft Questions • ODAC Roster • Briefing Information on the Product

Photo of Tom and Emily Whitehead used with permission of Tom Whitehead.

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