

THE CURE CHRONICLES

February 2022 ISSUE

Enabling affordable and accessible advanced medicines

Hello,

Welcome to our first issue of 2022. While the world is filled with challenges ranging from racial justice, military conflict, and the continued pandemic, we would like to share our latest issue, reporting advances in bringing curative therapies to all.

The resources available on our [website](#) to members (membership is free!) continues to grow -including the ability to view archived presentations from leaders in the field. These include Dr. Cissy Kityo Muguruza who in February shared a talk on “Enabling HIV CURE Therapies in LMICs” and Dr. Nirali Shah who spoke in January on “Current Challenges in CD19 CAR T-cells for Pediatric ALL: Implications for the Global Community.”

News

Here is the latest on what we are excited about:

There were many excellent presentations at the recent CROI 2022 (Conference on Retroviruses and Opportunistic Infections), especially the session dedicated to CAR-T approaches caught our attention. **Dr. Hans-Peter Kiem**, Fred Hutchinson Cancer Research Center, shared a talk on “*Generating CAR T Cells in vivo.*” In vivo CAR-T cell generation is a technological goal for many, as it would revolutionize our approaches- eliminating the need for expensive and resource intensive procedures for cell isolation and manipulation outside the body. **Dr. James L. Riley**, University of Pennsylvania shared a talk on “*New and Improved T cell CARs for HIV*”

Eradication or Control.” As part of his presentation, he shared scintillating details about another potential cure, wherein a patient, haploidentical for CCR5, received gene editing approaches to remove the extant CCR5 as well as an anti-HIV CAR-T cell product. While the data is not public, the background to the trial can be found in his presentation to the [Treatment Action Group’s Pre-CROI Community HIV CURE Research Workshop from 2020.](#)

In further support of a biological cure, the field was further encouraged by the **fourth patient now reported to have been cured using a novel stem cell transplantation approach**. This is the first report of a woman to be cured by such an approach. Kudos to Drs. **Koen Van Besien, Jingmei Hsu, and Marshall Glesby** and the team that developed this approach. See descriptions at:

[Patient Possibly Cured of HIV Infection by Special Stem-Cell Transplant](#)

And:

[CROI 2022: Fourth potential stem cell HIV cure – in a US woman using donor cord cells](#)

In keeping with the theme of biological control or elimination of HIV infection, teams led by Drs. **Sharon Lewin** and **Steven Deeks** reported that [Pembrolizumab induces HIV latency reversal in people living with HIV and cancer on antiretroviral therapy.](#) This approach encourages further investigations into developing combinatorial approaches that can address the challenge of HIV latency.

Finally, Dr. **Kim Anthony-Gonda** of Caring Cross has continued to refine the application of anti-HIV DuoCAR-T, an improved and more potent CAR-T cell therapy, reporting that intravenous injection of duoCAR-T in humanized mice bearing HIV infected human cells effectively controls and eliminates infected cells: [PRECLINICAL STUDIES TOWARD A PHASE I/IIA TRIAL USING ANTI-HIV DUOCAR-T CELL THERAPY.](#) Caring Cross is collaborating with Drs Steven Deeks (USCF) and Mehrdad Abedi (UCD) to conduct the first-in-human phase I/IIa study to evaluate the safety and efficacy of anti-HIV duoCAR-T cell therapy in PWH (NCT04648046).

Community Advocate Spotlight

Nirav Shah, MD, MSHP

Associate Professor of Medicine, Medical College of Wisconsin



Tell us about your background and how you came to be in your current position.

I was born and raised in the Chicagoland area. After completing my residency and fellowship training on the East coast, I wanted to return home to be close to friends and family. While I didn't land in Chicago, there was an exciting opportunity to develop a cell therapy program in Milwaukee at the Medical College of Wisconsin. Joining the program in 2015, I have been able to launch an in-house point-of-care CAR program for patients with relapsed non-Hodgkin lymphoma and over 5 years have treated >50 patients on our varying clinical trials. Our goal remains to advance the field of cell therapy and improve the accessibility of these treatments for patients throughout the state of Wisconsin.

Tell us what the focus of your efforts at the present time is and what motivates you.

Advancing CAR T-cell therapies for patients with relapsed, refractory B-cell malignancies. We aim to optimize manufacturing, develop new constructs, and ultimately improve outcomes for patients with relapsed lymphomas and leukemias.

I am motivated every day by the patients that walk into my clinic. Unlike many other cancers, we see a large number of young patients whose lives are disrupted by a cancer diagnosis. Their courage and perseverance motivate me to continue to work hard to develop new therapies to treat those who are not cured with standard approaches.

What is your vision for the future and how would you overcome any challenges?

My vision is to increase the accessibility and improve the affordability of cell therapy treatments for all patients through the research we are doing and through collaborations with organizations like Caring Cross. Cell therapy is going to be a large part of future cancer treatments and I want to remain on the forefront of its development.

If there is one thing that would make a difference to your efforts, what would it be?

Ultimately so much of what we do is limited by money and resources. NIH dollars are hard to come by and often don't support clinical trials. Philanthropy similarly is limited and not easily accessible. To not have financial limitations would free us to do the work the way we want to do it.

What is a fun fact about yourself that you would like to share?

Despite living in Milwaukee, I remain an avid Chicago sports fan (despite our ongoing losses to the Packers for the last 20 years). Pre-COVID traveling was one of my passions. I've been to all the continents but Antarctica and hope we can return to some normalcy in the future.

Whitepapers

Interested in learning more? Read our latest whitepapers on the Caring Cross website. Click below to access them.

→ [Centralized vs Decentralized Manufacturing of Personalized Cell Therapies: CAR-T cell Product Manufacture, Quality and Release](#)

→ [Centralized vs Decentralized Manufacturing of Personalized Cell Therapies: Overview and Logistics](#)

→ [Introduction to Chimeric Antigen Receptor \(CAR\) engineered immune cells](#)

Upcoming Events

Next month's **education tutorial** will be the sixth in a series of 9 presented by Rimas Orentas, PhD, Caring Cross Scientific Director.

CAR-T: A deeper dive into structural and signaling domains (series 6/9)

In this webinar we will explore more deeply how the domains (protein sequences) of a chimeric antigen receptor (CAR) and the intracellular signaling domains encoded by the CAR influence the activity of the cell expressing it – either decreasing or increasing the ability to mediate disease-controlling effects

→ [Register for the event](#)

Date: March 4, 2022

Time: 3:00pm EST / 12:00pm PST

Location: Zoom (link provided upon registration)

This event will last approximately 30-40 minutes and will consist of a presentation and Q&A session following.

All our events are on Fridays at 3pm EST and require registration to access the live webinar. A recorded replay will be available to Caring Cross Community members only (**Membership is free**).

Recent Events

If you missed these recent events, click on the links below to view them.

- [Enabling HIV CURE Therapies in LMICs](#)
- [Tuning CARs: antigen density \(series 5/9\)](#)
- [Current Challenges in CD19 CAR T-cells for Pediatric ALL: Implications for the Global Community](#)
- [CAR target antigen binding moieties \(series 4/9\)](#)

If you are not a member, you can [become a member](#) and view all our past events.

Caring Cross Community

This month we present a short video from Moses Supercharger from Uganda, explaining why we need to work together for a cure to HIV. He is a passionate advocate, always at work to spread hope, education, and awareness.

- [Supercharger video](#)

We are creating a membership community to connect healthcare professionals, scientists and engineers, community advocates and business leaders that are on a mission to develop new advanced medicinal cures - and help make them affordable to all who need them.

Join us to collaborate in a group, learn from seminars and training, and gain access to job opportunities or internships.

[→ Become a member](#)

What else would you like to hear about in this newsletter?

Reply to let us know.

Thank you for being here, look out for another update every other month!

- Caring Cross

P.S. Are you following along with us on social media? Be the first to know about our progress and share in the conversation!

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