



CANCER RESEARCH INSTITUTE IMMUNOTHERAPY PATIENT SUMMIT

Houston October 26, 2019



Welcome



Brian Brewer Cancer Research Institute





Scientific Experts

Adi Diab, M.D. MD Anderson Cancer Center

Jianjun, M.D., Ph.D. MD Anderson Cancer Center

Valentina Hoyos Velez, M.D.

Baylor College of Medicine

Andrew Sikora, M.D., Ph.D.

Baylor College of Medicine

Patient Experts

Isolde Artz Melanoma

Dale Biggs Skin cancer

Ron Speidel

Bladder cancer

Samir Tanios Mesothelioma





This event is made possible with generous support from:





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Thank you to those who helped promote the summit

- American Cancer Society
- Baylor College of Medicine
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- Colorectal Cancer Alliance
- Crush It For Curtis Foundation
- Esophageal Cancer Awareness Association
- Fight Colorectal Cancer
- FORCE
- Go2Foundation For Lung Cancer
- Houston Methodist Cancer Center

- Imerman Angels
- Leukemia & Lymphoma Society
- LUNGevity
- MyCancerConnection MD Anderson
- National Ovarian Cancer Coalition Texas
- Pancreatic Cancer Action Network
- Patient Empowerment Network
- SHARE
- Us TOO
- Young Survival Coalition



Morning Session	10:00 AM – 12:00 PM
Lunch	12:00 PM – 1:00 PM
Afternoon Session	1:00 PM – 2:15 PM
Breakout Sessions	2:30 PM – 3:15 PM

Clinical Trial Navigator Appointments are available from 9:00 AM to 4:00 PM. Please stop by the check-in desk near registration to learn more.



You will receive two emails after the summit:

- **1. A survey** to share your feedback on the summit as well as insights into future programming.
- **2.** Information from the summit day, including this presentation and instructions on how to use our <u>Clinical Trial Finder service</u>.



Pioneering Immunotherapy







Helen Coley Nauts, D.Sc. (Hon.) Co-Founder, Cancer Research Institute 1907 - 2001

CRI Mission

SAVE MORE LIVES

by fueling the discovery and development of powerful immunotherapies for all types of cancer.



Sharon Belvin Melanoma Survivor & Mom









FUNDED

INVESTED

TRUSTED

3,300 scientists worldwide

\$420+ million

Platinum, A+ charity



#CRIsummit

Immunotherapy 101





Adi Diab, M.D.

Associate Professor, Department of Melanoma Medical Oncology, Division of Cancer Medicine, MD Anderson Cancer Center



Origin & Revival of Immunotherapy











1890s: William B. Coley

1900s: Paul Ehrlich

1960s: Lloyd J. Old 1980s-present: Jim Allison

Immunotherapy: A Potential Cure?





years

The Immune System at a Glance: Our Natural Defense System





Tonsils Structures at the back of the throat that Nose sample bacteria and viruses that enter Hairs and mucus trap foreign the body through the mouth or nose particles and prevent them from entering the body Lymph nodes Small, bean-shaped structures located throughout the body that filter lymph fluid; where immune cells are alerted to Thymus the presence of pathogens or cancer Small organ located just behind the breastbone where T cells mature (the "T" is for thymus) Spleen Fist-sized organ located in the upper-left part of the abdomen, containing white blood cells that fight **Bone Marrow** infection and cancer Tissue in the center of bones that is responsible for making blood cells, including white blood cells

Lymphatic vessels

Thin-walled tubes that collect and transport lymph fluid throughout body

3

White blood cells

White blood cells-including macrophages, dendritic cells, and lymphocytes-are the cellular actors of immunity

The Cells of the Immune System: The "Soldiers" in our Army



















MMUNOTHERAS













Cancer Cell Activated "killer" T Cell

















Immune Checkpoints Can Suppress Immune Responses









Immune Checkpoints Can Suppress Immune Responses









Immune Checkpoints Can Suppress Immune Responses









Normally, PDL1-PD1 leads to T cell "exhaustion"







































Adoptive T Cell Immunotherapy









Adoptive T Cells In Action (Against Melanoma)

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T Cell Receptor Engineering

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Equip T cells with new, cancer-targeting TCR

CAR T Cell Immunotherapy (Chimeric <u>Antigen R</u>eceptor)








CAR T Cell Immunotherapy (Chimeric <u>Antigen Receptor</u>)







CARs enable MHC-independent targeting & killing!



CAR T Cell Immunotherapy (Chimeric <u>Antigen Receptor</u>)







CARs enable MHC-independent targeting & killing!



CAR T Cell Immunotherapy (Chimeric Antigen Receptor)







CARs enable MHC-independent targeting & killing!



Oncolytic Virus Immunotherapy







- Viruses can alter our cells' DNA, by inserting their own genetic material
- Impaired defenses make tumor cells more susceptible to infection



Oncolytic Virus Immunotherapy







- 1) Viruses cause tumor cells to "burst" & release antigens
- 2) Immune cells uptake & present tumor antigens
- 3) Stimulates adaptive, and potentially systemic, immune responses



Reprogramming Oncolytic Viruses To Enhance Anti-Tumor Activity













Tumor Antigens (provided by vaccine)



















Vaccine-Induced Elimination of Cancer Cells



Cancer Cell Activated "killer" T Cell

IMMUNOTHERAPY



Vaccine-Induced Elimination of Cancer Cells



IMMUNOTHERAPY





Personalized Neoantigen Vaccine Trial



CD4





Sequencing



Bioinformatics



CD8

AMINO ACIDS

PEPTIDE



7

Challenges in Cancer Immunotherapy





- Discovering and validating new biomarkers to help doctors predict which patients will respond to which immunotherapies
- Determining the best way to combine immunotherapies with each other as well other treatments to extend immunotherapy's benefits for more patients
- Learning how to decouple side effects of immunotherapy from benefit



- Why have most responses been modest and why are some cancers refractory to immunotherapy?
- Cancers upregulate molecules to turn off immune cells



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- Why have most responses been modest and why are some cancers refractory to immunotherapy?
- Cancers upregulate molecules to turn off immune cells
- 2. Cancers secrete chemicals to turn off the immune system







Why have most responses been modest and why are some cancers refractory to immunotherapy?

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- Cancers upregulate molecules to turn off immune cells
- 2. Cancers secrete chemicals to turn off the immune system
- 3. Cancers recruit suppressive cells to inactivate/block the immune response



CD8

(cytotoxic T cell)

CD3

(T cell)

CD68

(macrophage/

microalia

DAPI

(nuclear)







LATEST RESEARCH UPDATES



Moderator Adi Diab, M.D. Melanoma









Panelist Valentina Hoyos Velez, M.D. Breast cancer

Panelist Andrew Sikora, M.D., Ph.D. Head and neck cancer

Immunotherapy Patient Perspective





Dale Biggs Skin Cancer Veteran







Lunch and Networking





LEARN ABOUT CLINICAL TRIALS





What Are Clinical Trials?







Research studies that involve people

• Designed to answer specific questions about new and existing treatments





• Aim to improve treatments and the quality of life for people with disease

Getting from Discovery to Approval





What Are Clinical Trial Phases?





Potential Advantages	Potential Disadvantages
Access to best possible care	Unknown side effects or risks
Receiving new drugs before they're widely available	Unknown benefits—drugs may not work as intended
Close monitoring by medical team	Not all patients may benefit
Chance to play active role in healthcare and research	Frequent tests and clinic visits
Help future generations	Possible need to travel to trial sites



Questions to Ask Before Volunteering



- Why is this trial being done?
- Why is it believed that the treatment being studied may be better than the standard treatment?
- What are my other options (standard treatments, other trials)?
- How did patients do in any previous studies of this treatment?
- How will the doctor know if treatment is working?
- How long will the trial last?



Questions to Ask Before Volunteering



- Can I continue to receive this treatment after the trial ends?
- What kinds of procedures or tests are involved?
- What impact with the trial have on my daily life?
- Will I have to travel for treatment? Will I be compensated?
- How often will I need to travel to receive treatment?
- Will I be hospitalized as part of the trial?
- What costs (if any) will be my responsibility to pay?



Getting into a Clinical Trial Isn't Always a Given



Trials are designed to ask specific questions, and must adhere strictly to entry criteria to ensure data is accurate and meaningful.

This also helps ensure patients who could be made worse by treatment are not exposed to the risk.

Common criteria include:

- cancer type or stage
- treatment history
- genetic factors
- age
- medical history
- current health status







I might only get placebo ("sugar pill") instead of treatment.



Placebos are rarely used and never given in the absence of some form of treatment.







Trials are only for people who have run out of treatment options (a "last resort").



Clinical trials are designed for people with cancer of all types and stages.







I need to travel to a large hospital or cancer center to participate in a clinical trial.



Trials take place at local hospitals, cancer centers, and doctors' offices in all parts of the country, in both urban and rural areas.







My health insurance doesn't cover the cost of care in a clinical trial.



Doctor visits, hospital stays, and certain testing procedures may be covered by insurance. Research costs are typically covered by the trial sponsor.







Signing a consent form "locks" me into staying in a trial.



Fact: You are free to change your mind for any reason about participating in a trial anytime before or during a trial.







I will be made to feel like a "guinea pig" experiment.



Fact: The overwhelming majority of trial participants say they were treated with dignity and respect, and report having had a positive experience in a trial.







Clinical trials aren't safe.



Fact: Safeguards including an Institutional Review Board, Data and Safety Monitoring Board, and an ongoing informed consent process ensure patients' rights and safety are protected.


A Word About Informed Consent



Informed consent = having all the facts before and during a trial

- Study purpose
- Length of time of the study
- Predictable risks
- Possible benefits
- Expectations
- Patient's rights

- Treatment alternatives
- Patient health monitoring
- Safeguards in place
- How to withdraw from study

Be bold in asking for details. It's YOUR treatment plan.



How Can I Find a Clinical Trial?

- Ask your doctor
- Ask another doctor if necessary...
- Contact a patient advocacy organization
 - Seek assistance from a clinical trial navigator, if offered
 - CRI Clinical Trial Finder: 1 (855) 216-0127
- Search online
 - https://www.cancerresearch.org/patients/clinical-trials
 - <u>https://clinicaltrials.gov/</u>









Lunch & Networking

Immunotherapy Patient Panel



Moderator	Panel	
Brian Brewer	Isolde Artz	
	Melanoma	
	Ron Speidel	
	Bladder cancer	
	Samir Tanios	
	Mesothelioma	
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BREAKOUT SESSIONS



General Immunotherapy Adi Diab, M.D.

Genitourinary Cancer Jianjun Gao, M.D., Ph.D.

Head and Neck cancer Andrew Sikora, M.D., Ph.D.

Breast cancer Valentina Hoyos Velez, M.D.



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Room 4

Ballroom

Room 5

CPB Telehealth





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