MARY CROWLEY
NEWSLETTER
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Therapies with IMPACT

Immunological therapies have had a substantial impact on cancer care. Among the most notable recently developed therapies are checkpoint inhibitors. Checkpoint inhibitors capitalize on the inherent immunogenicity of some tumors (often driven by a higher number of mutations or alterations in a tumor's DNA) and make the immune system more adept at recognizing tumor cells as being "out of place" and targeting them for destruction. Checkpoint inhibitors are now considered first-line options in immunogenic tumors such as melanoma and some non-small cell lung cancers where immunotherapy can often provide robust and sometimes long-term disease responses.

Prostate cancer is the most common non-skin, cancer in men and the second most common cause of cancer death in males. Prostate cancers, in general, are not highly immunogenic. However, several emerging and existing strategies are being explored that might allow for more efficacy of immunotherapy. First, molecular characterization of prostate cancers can identify a sub-population of immunogenic tumors, more likely to create neo-antigens and more responsive to checkpoint blockade. This includes the minority (roughly 2%) of patients that harbor mismatch repair deficiencies and the few percent of patients with biallelic loss of CDK12. Beyond these patients, prostate cancer genetics can also define the substantial fraction of men that have DNA repair deficiencies or alterations in signal transduction pathways (i.e., the PTEN/AKT/PI3K pathways) and may benefit from participation in clinical trials using targeted molecular therapies.

Beyond identifying patients with tumors producing neo-antigens, ubiquitous prostate antigens such as prostatic acid phosphatase (PAP) might be used as targets for the immune system. Such an approach, using Sipuleucel-T (Provenge), was tested in the IMPACT study and found to increase the overall survival of men with metastatic castrate resistant prostate cancer. Provenge is a personalized cellular therapy in which antigen presenting cells are removed from a patient, "trained" to prompt responses to PAP and then given back to the same patient. Based on its efficacy in advanced disease, this therapy was approved by the FDA. More recently, Provenge is being investigated as a therapy for localized prostate cancer. Building on evidence that Provenge is safe and more effective when given to men with lower disease burden, the ongoing Provent study is analyzing whether the therapy, given early in the disease course, might delay time to further treatment or eradicate the disease entirely.

A third strategy to harness the immune system in prostate cancer involves trials of thoughtful combinations of therapeutics. Beyond combining immune regulatory agents together (i.e., checkpoint inhibitors with immune agonists or other checkpoint inhibitors), it has been noted that the microenvironment of prostate cancer might be modulated by androgen axis inhibitors, particularly more recently developed androgen receptor blockers and that this might allow for the sensitivity of prostate cancer to checkpoint blockade and other immunotherapies.

Mary Crowley Cancer Research is proud to have participated in the IMPACT trial and other studies of immunotherapy in prostate cancer, and is privileged to be currently offering the Provent trial as well as other novel immune based therapeutic approaches to the disease.

By Ashley E. Ross, MD, PHD
Executive Medical Director

MAKING CONNECTIONS

by Tina Nghiem, Associate Director of Clinical Trial Development

Mary Crowley Cancer Research is grateful for the patients, families, healthcare professionals, and community members who make clinical research possible by participating in clinical trials. Another critical piece to the clinical research puzzle is the pharmaceutical/biotechnology companies.

After discovery of a drug and subsequent laboratory and animal testing, pharmaceutical/biotechnology companies design study plans to address how the drug will interact with the human body. The study plan indicates the objective that each of the clinical research phases should accomplish to ultimately receive drug approval by the Food and Drug Administration (FDA). Drugs are classically tested in the sequence of small-scale, pan-tumor phase I clinical trials to large-scale, tumor-specific phase III clinical trials.

Unlike other cancer centers, MCCR is dedicated to early phase clinical research and strives to continuously expand its repertoire of clinical trials. There are nearly a thousand enrolling or planned phase I cancer trials in the US, but only twelve percent of those trials are available in Dallas, TX. The Study Development Team at MCCR works to narrow that gap and establish opportunities for cancer patients to receive an investigational therapy.

The Study Development Team actively liaises with collaborators at pharmaceutical/biotechnology companies to discuss clinical trials that will be appropriate for MCCR. These relationships usually begin with research into the company's pipeline of trials and subsequent outreach to retrieve information about the clinical trial of interest. With the information in hand, the Study Development Team

reviews and assesses the medical and logistical feasibility of the trial. If determined that the trial is a fit for MCCR, the Study Development Team arranges for the collaborators to tour MCCR's facilities to demonstrate that MCCR has the capabilities to perform their trial. Usually impressed, the collaborators complete the site selection process with an official notification. Afterwards, the Study Development Team will facilitate the trial start-up process to ensure that contracting, budgeting, and regulatory timelines are met and that MCCR is activated for enrollment. At this point, the trial becomes available to the patients.

Early phase clinical trials are designed to accrue less than a hundred participants. Therefore, collaborators are mindful of selecting a small set of sites across all targeted regions. To tackle the competitive nature of early phase clinical research, the Study Development Team executes a simultaneous approach of early engagement with new collaborators and ongoing engagement with long-term collaborators.

Establishing and fostering relationships with collaborators, promoting MCCR's capabilities, and highlighting MCCR's reputable research performance to the collaborators at pharmaceutical/biotechnology companies have positioned MCCR to provide innovative, cutting-edge options for patients.

Psychosocial Factors Involved in Oncology Research

by Phyllis Yount, LCSW, Social Worker

Cancer treatment requires coordination of multiple specialists. Research in phase I and II trials is a part of that mix as individuals progress through standard of care and are looking for additional options to treat their disease. When clinical trial participants begin treatment at Mary Crowley for the first time, they have to develop relationships with a new set of providers and caregivers in the outpatient clinic setting. This can increase their feelings of

From L: Phyllis Yount, LCSW - Social Worker, Leah Plato, PA-C, MPH, CCRP 1 - Associate Director of Clinical and Scientific Operations, Ned Adams, RN - Clinical Research Nurse

anxiousness until this relationship is established. These individuals often have a number of issues that may be challenges for them at this time including finding adequate family support, increased use of insurance and medication costs and lifestyle interruption.

Strong support from physicians, midlevels, nurses and social workers who understand the research process can help them transition to active participation in research. Once the clinical trial has started, patients experience a whole range of feelings based on how they physically manage the clinical trial. With increased fatigue or loss of appetite and decreased ability to complete normal activities, research tells us that study participants may be more likely to feel anxious or depressed. This can be properly managed in the clinic setting with referrals to counselors and medication.

Many individuals show a great deal of strength physically and mentally while in clinical trial. Not only do they rise to the occasion of completion of trials, but they decide to go on to a second or third trial. There is also a known value for these individuals in trial participation. These individuals know they are participating to potentially impact their own disease and they also know they are helping others by clinical trial participation.

Friends of Mary Crowley Reception

Mary Crowley Cancer Research kicked off The Friends of Mary Crowley, its new donor recognition program, at a reception on May 6. Co-chairs Paige Myrlin and Gianni LaBarba helped to ensure the night's success, where Mary Crowley supporters learned about the latest advances in cancer research and mingled with Mary Crowley employees.

Also at the reception, Friend of Mary Crowley Marlane Miller presented her donation of $150,000 to Mary Crowley Cancer Research. Marlane spoke movingly about her multi-year battle with breast cancer, of which she is a survivor, the discomfort and pain she suffered while undergoing chemotherapy, and the importance of the work that Mary Crowley is doing by advancing personalized medicine. Thanks to the generous support of Marlane, Mary Crowley can serve even more cancer patients by bringing more clinical trials to North Texas.

Red Nose Day

Staff at the Mary Crowley Clinic celebrated Red Nose Day on May 23 in memory of former patient Donna Manna. Donna's mission in life was to spread laughter, hugs, and compassion as "Donnabelle the Clown". Last year, while Donna was on trial at Mary Crowley, she and her husband Paul brought red noses for clinic patients and staff as a reminder to see joy in all aspects of life. This year, Mary Crowley staff continued the tradition in Donna's honor.

Donna "Donnabelle the Clown" Manna

Chili time!

Mary Crowley staff participated in the Young Texans Against Cancer (YTAC) Dallas Chili con Queso Cook-off For A Cure on April 13. Despite the rainy weather, Mary Crowley's Margaritaville Tequila Chili kept spirits high. Attendees voted on their favorite dish, enjoyed live music, and extinguished the heat from the samples with cold beer from Four Corners Brewing Co. or drinks from Dulce Vida Tequila and Topo Chico USA. Celebrity judges also awarded prizes for best tastes and other categories including team spirit, crowd favorite and cutest dog. The event raised $14,000 in support of YTAC's 2019 beneficiaries, which includes Mary Crowley.

Sturgis Grant

Mary Crowley is grateful to receive a generous grant of $10,000 from the Roy & Christine Sturgis Charitable Trust, which was established in 1981 to support and promote quality educational, cultural, human services and health care programming for all people. Mary Crowley will use the funds for its Innovative Clinical Trial Program to help open new trials for waiting patients.

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Patient Story: Marcus Wiggins

In October of 2016, Marcus Wiggins was looking forward to a day of doing his favorite thing – bass fishing at Grapevine Lake when he literally fell into his boat breaking his left leg above the knee. Stubborn as he was, he decided to drive himself to Denton Presbyterian Hospital. In the process of x-raying, doctors discovered that he had a 6mm osteogenic sarcoma tumor in his leg and sent him to Dallas Presbyterian hospital for further treatment.

Marcus endured 4 rounds of Adriamycin/Cisplatin chemotherapy, followed by limb salvage surgery for the cancer in January 2017 and another 6 rounds of chemotherapy. In November of 2017, Marcus noticed pain and lumps in his leg. After an MRI, his doctor informed him that his leg needed to be amputated, which was performed January 23, 2018. Fast forward to August 2018, getting up out of a chair Marcus broke his right femur 3 inches below the hip joint due to osteosarcoma. Having been in Las Vegas for a conference, he was able to make it back to Dallas the next day with the help of a few co-workers to have a femur replacement surgery where they cut 6 inches of femur off and replaced it with metal. Lung tumors were also discovered and the doctor gave Marcus 20–30% chance to live.

In October 2018, Marcus came to Mary Crowley. He is currently on a trial receiving an investigational drug that shows potent anti-tumor activity along with an immunotherapy drug. Marcus was seen by Dr. James Strauss, Dr. Minal Barve, and Dr. Jairo Olivares at Mary Crowley. He said they "thought outside the box" and if was not for Mary Crowley, Texas Oncologist Dr. Bijal Modi, and Greater Dallas Orthopedic surgeon Dr. Cyrus Abbaschian, he would not be here today.

His most recent CT scan shows an overall decrease of tumors. Side effects from the drugs are minimal and have allowed him to continue a high quality of life with his family.

Marcus is a 43 year old retired Air Force veteran of 20 years and full-time Aircraft Maintenance Support Engineer with Lockheed Martin Corporation. He is married to Jackie, who is a teacher at Medlin Middle School in Trophy Club, Texas, and has two children. A lover of animals, Marcus has three dogs – Annie who is a 10 year old pure-bred mini-poodle rescue from Las Vegas, Rosko, a nine year old half poodle and half Jack Russell terrier rescue from Los Angeles, and Zekie- a 5 year old Schnauzer mix rescue from Dallas.

Marcus has what he calls "his three F's" in life – Faith, Family and Friends and is an active member of GracePointe Church in Denton. He loves all of the staff at Mary Crowley Cancer Research and the staff love him as well.

Marcus lives by the saying "When worry ends, faith begins".