Glen Melby: Actively Moving Cancer Science Forward

Glen Melby is happy to discuss the potential benefits of clinical trials with just about anyone, because he has experienced those benefits. Twice.

Melby was first diagnosed with non-small cell lung cancer (NSCLC) in 2008. He began radiation and chemotherapy, NSCLC clinical trial, the Food and Drug Administration (FDA) had just months prior fast-tracked the approval of a targeted drug therapy, Crizotinib, for patients whose tumors had a mutation in the ALK gene. Melby’s tumor was sequenced and found to be one of the roughly four percent of NSCLCs that are ALK+. He began taking Crizotinib almost immediately.

“You just don’t see oncologists be giddy, but after Glen’s first PET scan after he started the drug, Dr. Vogel was,” said Dianne Melby, Glen’s wife.

For nearly two years, Melby took Crizotinib, an oral drug that targets ALK-mutated cancer cells and therefore has fewer side effects than standard chemotherapy.

However, his cancer grew resistant to Crizotinib, and Vogel referred Melby to Dr. Anne Traynor at the UW Carbone Cancer Center. Traynor offered him an option to enroll in a clinical trial to investigate a next-generation ALK-targeted therapy, Alectinib.

“After having such success with Crizotinib, stepping into this trial was a no-brainer for me,” Melby said.

He began the trial in February 2014. While his cancer is still detectable by scans, there has been no further advancement of the disease.

“This drug has been wonderful for me,” Melby said. “The fact that side effects are minimal, the fact that I go on with my life, I go to Florida to see my grandkids. It’s been over seven years since I was diagnosed with an aggressive cancer, and I’m still here.”

Traynor noted future patients would benefit from Melby’s participation in the Alectinib trial, just as he had benefitted from those who had enrolled in the Crizotinib trial.

“Without brave patients like Glen enrolling in trials, cancer science cannot move forward,” Traynor said.
Should you participate in a cancer clinical trial?

Cancer affects us all—whether we have it, care about someone who does or worry about getting it. Patients undergoing cancer treatment may learn about clinical trials—research studies that may help improve cancer treatments and minimize symptoms. Each study tries to answer questions that can prevent, diagnose or treat cancer and improve a patient’s quality of life.

In the past, cancer clinical trials were sometimes seen as the last resort. Today, many people with cancer receive their first treatment on a clinical trial. Having more people participate in clinical trials is the fastest way for researchers to discover more effective cancer treatments.

Types of clinical trials
• **Treatment trials** test new cancer medicines, approaches to surgery or radiation therapy or treatments such as anti-cancer vaccines.
• **Prevention trials** test new approaches, such as medicines, vitamins or other supplements that may lower the risk of developing a certain type of cancer. These trials look for ways to prevent cancer in people who have never had it or to prevent cancer from coming back.
• **Screening trials** test the ways to find small, curable cancers that have not caused any symptoms.
• **Quality of life trials** explore ways to improve comfort and to reduce symptoms for cancer patients.

Enormous improvements in treating childhood cancers have come about as the direct result of clinical trials. In 2000, nearly 80 percent of children with cancer were alive five years after diagnosis, compared with only 55 percent in the mid-1970’s.

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**Importance of clinical trials**

When people enroll in clinical trials, we can improve cancer care. The following examples highlight the progress made from clinical trials:

• In a common lymphoma subtype called diffuse large B cell lymphoma, researchers discovered adding rituximab to standard chemotherapy improved the treatment so much that a majority of newly-diagnosed patients are cured.
• In breast cancers that measure less than three centimeters in diameter, trials showed women do not need extensive surgery to remove lymph nodes in the armpit. The results are fewer surgeries and a lower risk of swelling of the arm.
• In colon cancer, trials demonstrated the importance of detecting if a specific biologic abnormality is present inside the cancer cells. This information helps doctors choose the most effective and least toxic medication to treat this cancer.

**Clinical trials at UW Carbone Cancer Center**

The UW Carbone Cancer Center (UWCCC) typically has over 200 clinical trials available for patients to enroll in. Please ask your doctor or nurse if you might benefit from participating in a clinical trial.

Please contact Cancer Connect, the UWCCC’s patient and physician telephone resource, at (800) 622-8922 for more information about clinical trials.

**In the know: fertility preservation for cancer patients**

Cancer patients who hope to become parents should consider preserving their fertility BEFORE beginning chemotherapy or radiation treatments. Thanks to better preservation methods, the chances of becoming a parent after treatment are better than ever.

UW Carbone Cancer Center specialists can work with the Generations Fertility Care clinic to help patients preserve their future fertility. Generations partners with the LIVESTRONG fertility preservation program to offer discounts to qualified cancer patients for certain fertility preservation drugs and procedures.

“"It gives them hope for their future after cancer’’ — Jeffrey Jones, MD

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**Dr. Anne Traynor** is the Faculty Director of the Clinical Research Program at the UW Carbone Cancer Center. An Associate Professor of Medicine, she specializes in the care of patients with lung cancer.
Pathologists: the most important doctors you never meet

When cancer patients are diagnosed, they will be given the stage of their disease. What does the staging number mean?

Robert Hegeman, MD and Michael Huie, MD, tell us five things you should know about cancer staging, below. For expanded explanations, please visit uwhealth.org/5things

This information is generalized for all cancers, but there are exceptions, so be sure to talk to a doctor about staging related to a specific cancer type.

Patients may never meet these doctors, but pathologists are crucial in diagnosing and treating cancers.

“By identifying cancer, we look at the cell morphology: what the cells look like and how they arrange with the other cells around them,” said Josephine Harter, MD, a pathologist with UWCCC who specializes in breast and gynecological pathology. “That part is critical, if not very sophisticated – people have been doing essentially the same thing for over 100 years.”

More recently, pathologists have been able to rely on advanced techniques to help physicians determine best treatment options moving forward.

“We can perform molecular studies to determine characteristics of the cells, or immunohistochemical stains to determine which proteins the cells are expressing,” Harter said. “In breast cancers, for example, we label for common hormone receptors, and the results determine whether or not anti-hormone therapy will be useful for those patients.”

Pathologists also determine if the cancer is original to the site from which it was biopsied or if it is a metastasis from another site, further helping to drive treatment plans.

“If I am looking at a breast tumor biopsy and see lymphoma, not carcinoma like we typically see in the breast, then that woman needs to have a complete redirection of her care; she doesn’t need to see a surgeon, she needs to see a hematologist for her cancer,” Harter said.

Cancers stages are numerical values, 1 to 4, and are determined based on the tumor’s size and how far it has spread.

Staging varies widely between tumor types.

No two tumors are the same, even if they are the same type and same stage.

Cancer stage and cancer grade do not mean the same thing.

Even with all the ambiguities, staging is a necessary part of a cancer diagnosis.
Molecular Tumor Board brings precision medicine to all Wisconsin cancer patients

Cancers are classified based on their tissue of origin, and treatment plans are often determined by the tumor location: colorectal cancer, skin cancer, brain cancer, and so on. Identifying the origin of the tumor is unlikely to end anytime soon, but classifications based on genetics are gaining traction and could lead to more effective, personalized treatments for cancer patients.

“In recent years, we have recognized that even within one organ type of cancer there are many different diseases that are pretty unique, and one way you can see these features is by looking at the genetics of the tumor,” said Mark Burkard, MD, PhD, associate professor of medicine at the UW Carbone Cancer Center (UWCCC). “We are hoping to ultimately use that information to customize people’s treatment, and that concept is called precision medicine.”

Before Vice President Biden announced precision medicine as a focus of the National Cancer Moonshot Initiative, doctors throughout Wisconsin were already starting to incorporate it into research and patient care. They went one step further by forming the Precision Medicine Molecular Tumor Board (PMMTB) in September 2015, a partnership between UWCCC and regional medical centers such as Gundersen Lutheran, Green Bay Oncology and Aurora Healthcare.

“The PMMTB is a group of physicians and scientists who can take the information about how each cancer is unique, make recommendations and try to figure out what that information means and how we can use it,” said Burkard, one of the PMMTB’s co-directors. “We are not the first molecular tumor board, but we are unique in that we are not just institutional, we are a resource for any patient in the state.”

In order to be considered for case review by the PMMTB, a patient’s tumor must first be sequenced to identify its DNA mutations, then the case is submitted by the patient’s oncologists. Cases are reviewed via teleconference where board members, comprised of oncologists, pharmacists, researchers and pathologists at UWCCC and throughout Wisconsin, analyze the case with the referring physician.

“The tumor board meets, looks at the mutations, looks at the clinical trials and drugs that are available, and based on that we can make a recommendation for the patient,” said Jill Kolesar, PharmD, professor of pharmacy at UW and co-director of the PMMTB. “If there is a drug that has been shown to target the same mutation in another cancer type, but it is not currently approved for their type of cancer, then we can make an off-label recommendation because we think the patient may benefit from the drug.”

Ben Parsons, DO, a medical oncologist with Gundersen Lutheran, said he participates on the PMMTB because of the benefits it offers him and his patients.

“As a clinician, it’s really difficult to stay on top of what these changes mean at the genomic level, and you learn a lot more about whether a mutation may be significant or not from the Board’s review than from the sequencing report,” Parsons said. “Even if I walk away having presented a case and there isn’t a clinical trial or off-label treatment option available, it is still a huge benefit to my patients because I leave with a better idea of the biological behaviors of their cancer and potential future treatment options.”

PMMTB review is limited to patients with active, incurable cancer because current evidence does not yet support treatment designed based on genomics alone. Patients with potentially curable cancers should not forego better-studied treatments. The Board carefully balances emerging evidence with the best evidence available to date to offer customized recommendations, and tracks patient outcomes on a research registry.

“A physician can order a high-powered genomic test and get detailed information about the patient’s tumor, but how to use that information is still a real challenge,” Burkard said. “We are collecting information about how well the recommended treatment is working and use it to adjust our recommendations as we go forward, benefiting current and future patients.”

“As a physician, I believe that genomic information is the future of healthcare,” Parsons said. “The Board is the future of precision medicine.”

The PMMTB reviews cases free of charge, but the patient or their health insurance company is responsible for the costs associated with the DNA sequencing and treatment drugs. As sequencing costs continue to decline, more and more insurance companies are paying for the tests. The tests, which sequence 50-500 cancer-associated genes from one tumor sample, cost about the same as individually sequencing two genes and spares the patient from multiple biopsies. They are available at UW or from outside companies.

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– Mark Burkard, MD, PhD
GONE VIRAL

Breast cancer patient, Ann Trachtenberg (right), became a viral sensation last July after the UW Marching Band surprised her exiting her last chemotherapy treatment. Ann’s nurse, Kelly Jones, threw her a “going away from cancer” party earlier this year to celebrate the completion of all treatments.

WATCH THE VIDEO: UWHEALTH.ORG/ANN