Don’t Give Up on Yourself

Hello fellow warriors . . . I have kept my journey very much to myself and a few close family members and friends. You see, I tend to absorb other people’s anxieties, worries, concerns – and if there is one weight a cancer patient doesn’t need to carry with everything that they are trying to process themselves – it is the stress of their trusted loved ones.

My journey began earlier in 2024 with a couple of weeks of experiencing intense itching on my hands and feet and what looked to be the beginning of jaundice on my face and eyes. After a checkup with my doctor, resulting in a CT scan that didn’t provide much information to identify the source of the issue, I ended up in the emergency room with a clogged bile duct. Four weeks and three bile duct stent replacements later it was officially confirmed that a mass on the head of my pancreas (approx. 3.3 cm) was the cause of the blocked bile duct. It was confirmed to be cancerous, but doctors were hopeful that it was detected early enough for Whipple surgery.

Unfortunately, further scans/tests were not able to confirm that there was no distant metastasis and doctors decided that I should begin 6 rounds of FOLFIRINOX chemo with the hope of reducing the mass for better probability of cancer removal with surgery. I managed to maintain a healthy weight and was fortunate that the first 6 rounds did not cause much nausea (that came later towards the final 6). I definitely had my downtime dealing with fatigue and that pesky neuropathy (mainly due to the oxaliplatin in the chemo), but thankfully it helped reduce the size of the mass and allowed me to move forward with surgery.

Surgery (albeit scary) was honestly not as bad as I imagined. I was moving around (though slowly) in two weeks and focused on

trying to give my body the fuel it needed with the new "plumbing" to get back on the remaining 6 chemo infusions. (Coincidentally, November 21st, 2024 will be my final (12th) round of chemo.) The next conversation will be with radiology since the surgery was able to exhibit that one lymph node was detected to have tested positive for cancer. Ultimately, the goal is to be given a "status" of being in full remission and long-term, cancer free.

So here is my takeaway – and I truly hope it helps anyone reading this – I knew, the minute the word "cancer" was mentioned, that **time was of the essence**. I could not have moved as fast as I did with tests, diagnosis and treatment had I not advocated so much for myself – and had the fortune of my sister and friends doing so for me as well. If I hadn't admitted myself into the emergency room early on, knowing something just wasn't right, my only option would have been to "take a number" and wait.

Cancer doesn't wait, nor should you. But **you must stick to your guns – be persistent and if you are overwhelmed (and you will be) ask for HELP!** Ask a family member or close friend to be your second set of ears and an advocate for you too. My bullheaded persistence allowed me to get released by the gastroenterology surgeon quick enough after my 3rd stent replacement to have my sister help me make the 3-hour trip to the nearest facility that could schedule me for port placement in order to start chemo the following week. For the duration of these chemo treatments, I did my best to nourish my body, rest and still try to push myself activity-wise for the sake of normalcy.

Don't give up on yourself! Don't give up on your loved ones either! Our bodies are wonderful, miraculous machines and you need to have faith in your body and not quit on it. I will tell you that there are not many positive stories out there – but I

believe there are lots of success stories that go untold and the reason we don't get to see those stories is because those warriors are busy living. I pray that we are very close to a successful solution, not just to cure, but to proactively assess the possibility of pancreatic cancer early on.

I realize that very little is known of this aggressive killer and the information that is out there can be daunting and discouraging for new and long-term patients. I believe that we need to not only shed light on how much more common this disease has become, but will give hope to fellow warriors, their family and friends, especially as new information is discovered for the treatment and cure.

Summary of the Hirshberg Symposium at the 2024 American Pancreatic Association

Each year, the APA gathers a global community of researchers to explore the latest advancements and opportunities in clinical and basic science research focused on pancreatic diseases, with an emphasis on pancreatic cancer. As part of this collaboration, the Hirshberg Foundation hosts the annual Hirshberg Symposium, spotlighting cutting-edge topics. This year's symposium, *Targeting KRAS to Treat Pancreatic Cancer,* delved into the evolving therapeutic landscape of KRAS inhibitors and shared fresh perspectives on the biology and treatment strategies for pancreatic cancer.

Field and Historical Timelines

Channing Der, PhD
University of North Carolina, Chapel Hill

Dr. Der reviewed the seminal findings in the field of KRAS starting with the identification of this signaling protein and the central role it plays in cellular physiology. Dr. Der is an expert in KRAS, made many of the initial discoveries about KRAS and continues this research. Nearly all pancreatic cancers have a mutation in KRAS, and it is thought that this is an initiating factor in pancreatic carcinogenesis. KRAS may have the same impact on as many as 20% of all cancer types.

Current Therapeutic Landscape of KRAS Inhibitors

Gabriela Chiorean, MD
Fred Hutchinson Cancer Center

Dr. Chiorean reviewed many of the clinical trials that have used KRAS inhibitors to treat cancer. Very recently, advances in the understanding of the structure and function of KRAS has allowed the ability to develop drugs that target this protein. Early trials with KRAS inhibitors like sotorasib (the first KRAS inhibitor approved by the FDA which targets the G12C mutation) and others indicate these drugs can have equal benefit to traditional chemotherapy in delaying cancer progression in patients with advanced disease. Now there is interest in combining KRAS inhibitors with other modalities like tumor vaccines and chemotherapy.

New Insights Into the Biology and Therapy

Strategies for Pancreatic Cancer

Raghu Kalluri, MD, PhD
University of Texas MD Anderson Cancer Center

Dr. Kalluri reviewed the biology of KRAS inhibitors and how cancers can have variable KRAS mutations in tumor development. Importantly, it is possible to reverse the impact of KRAS on early changes in the pancreatic cancer development before the cancer is formed with KRAS inhibition in models. This demonstrates the importance of KRAS and how targeting this abnormally active protein is potentially very valuable for patient treatment.

Mechanisms of Resistance to KRAS Inhibitors

Andrew Aquirre MD, PhD
Dana-Farber Cancer Institute, Broad Institute at Harvard and MIT

Dr. Aquirre discussed the current status of KRAS drugs and relayed that there are as many as 100 new KRAS inhibitors in development to treat cancer. Each drug has a different mechanism of action and because pancreatic cancers can have variable expression of mutant KRAS throughout the tumor and over time, it will be important to understand the mechanisms of resistance to these new drugs so treatment can be revised for the patient as the tumor evolves.

The 2024 Hirshberg Symposium provided a comprehensive exploration of the latest advancements in KRAS research, emphasizing its critical role in pancreatic cancer development and treatment. From historical milestones and groundbreaking therapeutic strategies to insights into resistance mechanisms and evolving clinical approaches, the panelists illuminated the promising future of targeting KRAS to improve patient outcomes.

As research continues to unlock new possibilities, collaboration and innovation are key to driving progress towards a cure for pancreatic cancer. The Hirshberg Foundation remains committed to supporting transformative research and sharing these critical updates with the community.

Watch the full recording of the Hirshberg Symposium from the APA →

Momentum Newsletter: Winter 2024

As the year winds down and we reflect on all we've done this year, we look forward to 2025 with pride and hope. We began the year with a ribbon-cutting ceremony at the new Agi Hirshberg Center for Pancreatic Diseases at UCLA. In this bright and beautiful new space where, patients are seen with a holistic, whole-body approach that unites clinicians under one roof. We had an amazing year of events, from our Symposium for patients and caregivers to our outdoor stationary cycling event, the Tour de Pier, to our signature LA Cancer Challenge that kicks off our month of awareness in November. It has been a full and busy year that fills us with hope and reinvigorates us to boldly face 2025 with the mantra, "Never Give Up! The journey continues with an end in sight."

Newly Designed Patient Resources and

Spanish-Language Resources

We've redesigned the Patient & Caregivers section of our website to include more resources than ever. From our Where to Begin guide to expanded information for families, our website caringly guides patients and caregivers through a pancreatic cancer diagnosis. Plus, we've translated crucial information into Spanish to help increase awareness in more communities. We're here to support anyone facing pancreatic cancer and our Patient Services are always free of charge.

Explore our new resources →

American Pancreatic Association (APA) Meeting & Hirshberg Symposium

Each year, the APA brings together an international group of researchers to discuss advances and opportunities in clinical and basic science research related to diseases of the pancreas, particularly pancreatic cancer. The Hirshberg Foundation hosts a Hirshberg Symposium to tackle emerging areas of study. This year's panel, *Targeting KRAS to Treat Pancreatic Cancer,* will cover topics such as the current therapeutic landscape of KRAS inhibitors and new insights into the biology and therapeutic strategies for treating pancreas cancer. We look forward to sharing more updates from the APA and our Seed Grant awardees who are researching KRAS.

Learn more about KRAS →

2024 Seed Grant Cohort Announced

Our Seed Grant Program continues to shine with our awardees receiving large grants from the NIH and NCI. This year, we're proud to fund more research than ever, thanks to the success of our Tour de Pier and LA Cancer Challenge events and your generosity! With projects focused on early detection, better treatment options, and innovative new ways to tackle KRAS, this year's cohort infuses the end of the year with hope. Since 2005, our Seed Grant Program has fostered an environment for research to bloom.

Meet the 2024 See Grant Cohort →

The 27th LA Cancer Challenge was an Incredible Success

In October, the 27th LA Cancer Challenge raised over $650,000, one of our most successful years to date, thanks to the fundraising efforts and participation of our LACC family! Joined by Honorary Starter and 9-year pancreatic cancer survivor, Tom Arai, we shared his incredible journey and inspired patients and families. We were also thrilled to give the Honorary Medical Chair title to three brilliant researchers, Drs. Timothy Donahue, Zev Wainberg & Caius Radu, who were awarded a transformative $4 million grant from the National Cancer Institute (NCI). Together, we surpassed our fundraising goal, celebrated how far our community has come and the ways in which we're moving forward.

As you prepare to make your tax-deductible year-end gift, the Hirshberg Foundation thanks you for being instrumental in driving research forward and giving countless patients and

families the support services they need. Together, we have raised awareness across the country and around the globe because of your unwavering support.

Making sense of the nonsensical when faced with pancreatic cancer

Wendy Hammers is a dear friend of the foundation and an inspirational pancreatic cancer survivor. She has shared her story and wisdom at our annual Symposium on the Patient & Caregiver Panel, through our Patient & Family Webinar Series – twice – and most recently, with UCLA Health. She is a joy and brings light to a difficult diagnosis. Her talks on "breaking up with cancer" are tangible tools that help patients and loved ones focus on the aspects they can control and encourage us all to laugh a little more.

This article originally appeared on the UCLA Health website on November 4th, 2024. You can find the original here.

By Leo Smith

"Comedy is part of the reason I'm alive," says Wendy Hammers, who gives motivational talks about how she "broke up with cancer." (Photo by John McCoy/UCLA Health)

Click on her 2015 video clip and you'll see Wendy Hammers in a

hospital room, an IV tube connecting her to a small, drab machine as she undergoes chemotherapy for pancreatic cancer. She is dancing and smiling during the infusion.

Hammers has approached her cancer journey – from the first excruciating pain to the diagnosis, and then through the treatment – with a positive attitude and a sense of humor.

“There were three prongs of treatment – chemotherapy, surgery and mindset. For me, mindset was the most important. It was the one that gave me the inner strength to deal with the other two,” Hammers said. “Comedy is part of the reason I’m alive. Humor is just another word for perspective – it helps makes sense of the nonsensical.”

Hammers has honed that attitude as a stand-up comic and actress who now travels the country giving motivational talks, loaded with laughs, on how she “broke up with cancer.”

A cancer with few clues

Pancreatic cancer is the No. 3 cause of cancer deaths in the U.S., behind lung and colon cancers. The five-year survival rate is just 13%, but improving by about 1% annually largely due to advances in treatment and therapies, said Timothy Donahue, MD, director of the UCLA Agi Hirshberg Center for Pancreatic Diseases.

Unlike other cancers – such as prostate cancer, which can be detected early through a prostate-specific antigen (PSA) blood test – there are no known early markers for pancreatic cancer.

“They’ve never found an accurate tumor marker that can be used for screening and earlier diagnosis among the broader population,” said Dr. Donahue, a member of the UCLA Health Jonsson Comprehensive Cancer Center and professor of surgery at

the David Geffen School of Medicine at UCLA. “The main precursor lesion that turns into pancreatic cancer cannot be seen on any imaging tests.”

For Hammers, unexpected weight loss may have been the first clue that something was wrong. But it was a severe stabbing pain on her left side, near her hip, that caught her attention.

“I felt good, until I felt terrible,” she said. “I lived with that pain for about a week before I went to the doctor.”

Diagnosis and treatment

The pancreas, a gland located in the back of the abdomen, helps with digestion and blood sugar regulation. Most tumors arise in the head of the pancreas, on the right side, said Dr. Donahue. In those cases, the cancer is usually diagnosed earlier than other parts of the organ because the tumors obstruct the bile duct causing patients to develop jaundice, a yellowing of the skin and the whites of the eyes.

Diagnosis of pancreatic cancer is divided into three categories: a small tumor confined to the pancreas (stage 1); a tumor that has grown outside the pancreas and involves blood vessels (stage 2 or 3); and a cancer that has spread to other organs, in most cases the liver (stage 4), Dr. Donahue said.

“When Wendy was first diagnosed, her tumor was partially involving some of the essential blood vessels around the pancreas. She was probably in the stage 2-3 range, a relatively early stage where it hadn’t spread to other organs,” Dr. Donahue said.

”In cases like that, we try to shrink the tumor with chemotherapy before pancreatic surgery, so hopefully we won’t have to do any major vascular work and reconstruction. We only

have to remove the part of the pancreas with the tumor," he said. "Her treatment was some chemotherapy first, then surgery, then a little more chemo to complete her course of therapy."

Humor and positivity

Hammers recalled that when she received her diagnosis, instead of asking "Why me?" she thought, "How am I going to manage this?"

Her optimistic approach remained constant as treatment progressed. During her six-day post-surgery hospital stay, friends decorated her room with cards and flowers, they played music. She had an essential oil diffuser filled with lavender to relax her and the staff and she inhaled orange oil to mask the medicinal smell of rubbing alcohol during chemotherapy sessions.

She had mood lighting brought in to help take the focus away from the medical machinery.

"There's no question that a positive outlook and optimism – and our partnership with patients as they try to maintain hope and an outlook that they're going to beat this thing – certainly helps their survival and helps them tolerate their treatments better," said Dr. Donahue. "For those who are less fortunate than Wendy, who don't wind up beating it, a positive outlook improves their quality of life, of the time they have left."

Dr. Donahue said he encourages his patients to think positively, despite the challenging circumstances. Hammers said she benefited directly from his coaching.

He said, "You have cancer. You're going to be fine. I'll be with you the whole time," she recalled.

Hammers' advice to others with cancer is to build a similar

network of supporters.

“Choose doctors that you feel are team members,” she said. “And express yourself – that will lead to less tension, better sleep and elevation of the immune system.”

And if you can, incorporate some humor into the cancer treatment plan.

“It’s so absurd, with things hanging out of your body,” Hammers said. “You need a way to laugh at it.”

What is Pancreatitis?

Pancreatitis is an inflammatory condition of the pancreas, with both acute (short-lived) and chronic forms, and a known risk factor for developing pancreatic cancer, especially in cases of long-term chronic inflammation.

Inflammation is an important part of the body’s response to infection or physical injury; it’s the signal that brings in the immune cells to fight the infection or to start the healing process. Usually, when the infection or injury is resolved, inflammation stops, but sometimes, this does not happen. This is called chronic inflammation and can damage cells and tissues. While pancreatitis is rare, it is a risk factor for developing pancreatic cancer.

Acute vs Chronic Pancreatitis

- **Acute Pancreatitis**: This is a sudden inflammation often caused by gallstones that physically block the vessels of

the pancreas or with heavy alcohol consumption. The main symptom is severe abdominal pain. While it usually affects just the pancreas, it can sometimes be more widespread and life-threatening.

- **Chronic Pancreatitis**: This type involves long-term inflammation that damages the pancreas tissue over time and can decrease the ability of the pancreas to function. A mixture of risk factors includes chronic alcohol use, tobacco use, and inherited genetic mutations. As the pancreas gets damaged, it can lead to issues like weight loss, malnutrition, and diabetes, and it raises the risk of pancreatic cancer.

Pancreatitis is generally considered acute (short-lived) or chronic, but there is a spectrum of disease between these two designations. Patients can have one acute case over the course of their lives or multiple episodes, and acute pancreatitis, when not treated, can lead to chronic pancreatitis.

Chronic Pancreatitis & Substance Abuse

Alcohol abuse can cause chronic pancreatitis and increase the risk of developing pancreatic ductal adenocarcinoma (PDAC), the most common form of pancreatic cancer. The risk is further increased in those patients who also smoke. As the body breaks down alcohol, it generates byproducts that can be toxic to cells. If there is a buildup of these toxic byproducts, an increase in digestive enzymes can occur. An overproduction of these enzymes, meant to break down protein in our foods, can disrupt the cells of the pancreas and lead to further health problems.

While genetics and inherited conditions are beyond our control, we can limit inflammation and reduce risk factors. Ongoing research aims to find better treatments and improve outcomes for

pancreatitis patients. If you or a loved one has pancreatitis and needs help, please contact Patient Support.

An overview of KRAS and it's importance in pancreatic cancer

Cancer arises from genetic mutations or changes in the DNA that allows cells to grow unregulated. Healthy cells don't divide unless given signals from the environment to initiate proliferation, mutations that allow a cell to grow, divide, or survive indiscriminately will initiate cancer. The *RAS* family of genes is made up of *KRAS, NRAS,* and *HRAS* and these genes encode proteins involved in telling a cell to start to undergo replication and division. While *HRAS* and *NRAS* mutations are found in 2.4 and 5.5% of cancers, respectively, *KRAS* mutations are the most commonly occurring *RAS* mutations in cancer found in about 20% of all cancer patients. [1] *KRAS* is mutated in colorectal cancer, lung cancer, and most prominently in pancreatic cancer.

KRAS mutations are found in over 85% of pancreatic ductal adenocarcinomas (PDACs; the most common form of pancreatic cancer) and are the first mutation, known as the driver mutation, for PDAC kicking off transformation from healthy cell to cancer cell. [1,2,3] KRAS* protein generally exists in its inactive form. When KRAS becomes activated, it signals through multiple pathways that allow a cell to grow, divide, and survive. Mutations in the *KRAS* gene result in KRAS protein that

is always active, disconnecting growth and division from the normal directions a healthy cell receives. This unchecked proliferation allows for the addition of more genetic mutations that are known to accumulate as a healthy cell turns into precancerous lesions (pancreatic intraepithelial neoplasms or PanINs) then pancreatic cancer during the progression of PDAC.

One reason that *KRAS* mutations are so prevalent in cancer is because there are multiple mutations that can lead to unregulated activation. Proteins are made up of amino acids put together by the code of the gene's DNA. Some genetic mutations swap out amino acids in a protein in a way that affects the function of the protein. In KRAS there are three amino acids that are seen mutated frequently, glycine 12 (G12), glycine 13 (G13), and glutamine 61 (Q61). [1,2,3] These amino acids can get replaced by a number of different amino acids that all result in an activated KRAS protein. G12 mutations are the most commonly seen in more than 90% of PDACs and the most common of these is G12D (glycine replaced with aspartic acid) seen in ~ 40% of PDAC tumors (Table 1).

Since *KRAS* mutations are the initiating event in PDAC and also found in other cancers, targeting *KRAS* for therapy is an area of active research. Researchers have looked for drugs that could block the activation of KRAS or the function of active KRAS but that has been difficult to date. The structure of KRAS protein doesn't have any obvious places where a drug could bind to and inhibit KRAS activity in this way. However, new advances have recently led to the discovery of inhibitors to specific KRAS mutations (Table 1) and these drugs are being tested in clinical trials alone and in combination with other types of therapy.

Inhibitors targeting G12C mutations were the first developed, have been tested in multiple clinical trials (Table 1) and have shown promising results for lung cancer. However, this specific

mutation is only present in ~1% of PDACs. Many of these agents are also early in clinical trials and results have yet to be reported. Agents targeting the more prevalent *KRAS* G12D mutation in PDAC are starting to enter the clinic with promising preclinical data but are yet to report clinical results for PDAC patients. Additionally, other ways to target KRAS have been developed and include pan-RAS inhibitors (that target mutant and wild-type* RAS), KRAS degraders (agents that destroy mutant KRAS proteins) and siRNA technology (instructs the cell not to produce mutant KRAS proteins). Like most targeted therapies, resistance is expected to develop underlining the need to test these KRAS targeted therapies in combination with other types of drugs for optimal responses.

Mutation	**Frequency in PDAC**	**Therapies in development**
G12D	~40%	MRTX1133, RMX-9805, HRS-4642
G12V	~30%	
G12R	~15%	
Q61H	5%	
G12C	1%	Multiple agents in the clinic for multiple indications: Sotorasib(AMG510), Adagrasib (MRTX849), Divarasib (GDC-6036), MK-1084, Garsorasib, JDQ443, IBI351, BEBT-607, BI-1823911, BPI-421286, D3S-001, GEC255, HBI-2438, Ly3537982, RMC-6291, HS-10370, Glecirasib, and YL-15293
G12S	<1%	
G12L	<1%	
Q61K	<1%	

Q61R	<1%	
A11T	<1%	
G13P	<1%	
G13D	<1%	
Q61H/G12D	<1%	

Table generated with data from [refs 1,2,3]

References

[1] Waters and Der. 2018. Cold Spring Harb Perspect Med
[2] Linehan, McDermott, and O'Kane. 2024. Front. Med.
[3] Luo J. 2021. Semin Oncol

*Genes are *italicized* and proteins are not, which is why KRAS is sometimes italicized but other times isn't, *KRAS* is the gene and KRAS is the protein.

*When a gene does not carry a genetic mutation it is referred to as "wild-type" and when a gene has changes in the DNA when compared to the wild type sequence it is referred to as "mutant"