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The Long Shots: When Patients Defy All Odds

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It was Christmas time when Heloisa Soares, MD, shuffled through a family crowding her 68-year-old patient's hospital bed.

The prognosis wasn't good.

Soares, a GI cancer specialist at Huntsman Cancer Institute in Salt Lake City, delivered the bad news: The patient had small-cell carcinoma of unknown origin, possibly the gynecology track.

Soares went on to explain that half of all patients with this disease die within the year and almost all — 90%-95% — die within 2. There was one more test to do. The chance that the patient had molecular markers they could leverage for immunotherapy was slim, “but we have to check,” she told them.

That was December 2021.

Today, the patient has been disease-free for almost 3 years.

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Genetic testing after the diagnosis revealed the patient was a candidate for immunotherapy. Soares prescribed an immunotherapy drug, and the patient responded quickly.

"Every time I see her, I remember walking into the hospital with all of her family around Christmas time," Soares told *Medscape Medical News*. This patient is a reminder not to give up, she said. Because "you never know if a patient is going to be one of the 5%."

Grief and loss are unavoidable parts of cancer care. On occasion, however, that long shot or last-

ditch treatment will work, often with little or no explanation.

Oncologists never know which patients will be among these rare, but real responders. But the amazing few create a hope that oncologists carry into every exam room.

Restless for More

For Sonikpreet Aulakh, MD, a neuro-oncologist practicing at West Virginia University, the odds for patients are often grim.

Every [brain cancer](#) treatment Aulakh recommends is risky. The chance that a treatment doesn't work is often greater than the chance that it will. And when a drug fails, the disease just has more time to grow.

So, when a patient does beat the odds, "it humbles me," she said. "And it makes me restless, restless to do more."

In early 2020, Aulakh was referred a patient with severe headaches. One look at the golf-ball-sized mass on the patient's MRI and Aulakh could already tell the cancer was aggressive.

After surgery to remove the tumor, follow-up testing confirmed [glioblastoma](#).

When Aulakh walked into the clinic to deliver the news to the patient and his partner, she could feel their fear.

She didn't mince words. The cancer was aggressive and fast-growing, she told them. In most cases, patients have less than 2 years to live.

"Doc, we will do whatever you recommend," she recalls them saying.

Aulakh started the patient on radiation and chemotherapy, and then incorporated tumor treating fields — a device worn on the scalp that emits mild electromagnetic fields and can help slow brain tumor progression.

A year later, the tumor showed signs of growth, so Aulakh prescribed an oral [targeted therapy](#) off-label alongside the device.

It was still a long shot. "I didn't know which way it would go," Aulakh said. "Once the disease starts to progress the likelihood of responding to treatment is low."

And she knew if this treatment didn't work, they would have to pivot fast.

The targeted therapy worked well for about a year, but when his scans showed growth in early 2023, Aulakh pivoted to a PD-L1 based immunotherapy.

It has now been 5 years since the initial surgery and 8 months on immunotherapy alongside the device. The patient is not only still alive, he has been able to keep active and spend meaningful

time with loved ones.

"That is the biggest achievement in my day-to-day career — keeping patients alive with quality of life," Aulakh said.

Balancing Hope and Reality

When Danielle Kirkey, MD, a pediatric oncologist at Fred Hutch Cancer Center and Seattle Children's Hospital, thinks of unlikely survivors, her mind goes to a patient who's 8-years old.

He was just 4 when he was first diagnosed with Philadelphia chromosome-positive [acute lymphoblastic leukemia](#) — a disease that, just a decade ago, was almost universally fatal.

Targeted therapies have improved patient outcomes, but the road to cure — for children especially — is still brutal.

During a particularly intense phase of chemotherapy, the young patient developed acute [heart failure](#) and a fungal infection, the most feared adverse event.

"We found ourselves faced with what seemed like insurmountable complications," Kirkey said.

Kirkey told the child's mother she couldn't leave the hospital — her son likely wouldn't make it through the night.

It was "heart-wrenching," Kirkey recalled. Especially in pediatrics, you never want to give up but, in that moment, the patient and the family needed to understand the full weight of the situation, she said.

The single mother of three heeded Kirkey's warning. She stayed with her son that evening.

The boy survived the night and the fungal infection but still had a long road ahead. Over the next few years, he relapsed twice before eventually receiving a stem-cell transplant.

"I felt defeat at multiple points, especially during the relapses," she noted. "The balance of hope and realism is a really difficult, fine line to walk," she said.

Today, a year out from his transplant, the patient is doing well, Kirkey said.

But his long battle shows that treatment goals can shift across a patient's journey. Living a long and healthy life may be the ideal, but on the difficult days, the goals may become smaller, more focused — helping the patient reach their next birthday or reducing uncomfortable side effects.

"Anything we can do to give the best quality of life for as long as possible is always at the forefront of our mind," Kirkey said. And on the best days, you may get even more than you hoped for.

New Age in Melanoma

Wade Swenson, MD, MPH, an oncologist in rural Minnesota, said that unlikely survivors with [melanoma](#) — while still far from the norm — have become more common than ever before.

"It has been a really exciting time to be in this field," Swenson said.

Early in his career, Swenson recalls a patient with metastatic melanoma who became one of his first immunotherapy candidates. The man in his early 60s came to Swenson's clinic from a large academic center in Chicago where he had been told to consider hospice.

Before making the hospice referral, Swenson recommended one last treatment option: The first-generation immunotherapy, [ipilimumab](#).

The patient showed a response in just a few weeks and has now been in remission for more than 12 years.

Today, doctors have come to expect these sorts of results with immunotherapy for melanoma, but it was shocking then and speaks to the rapid evolution in the field, Swenson said.

"If you look at the materials I used for my initial certification and recertification 10 years ago, it's crazy. It's just the dark ages by comparison," Swenson said.

Exceptions that Feed the Soul

When Don Dizon, MD, thinks of a patient that defied all odds, his mind goes to a young woman he treated over a decade years ago when he worked at Massachusetts General Hospital in Boston.

Her [endometrial cancer](#), which was DNA mismatch repair-deficient, didn't respond to chemotherapy. Her pain became so excruciating that Dizon had to refer her to hospice. He also prescribed [pembrolizumab](#).

"The immunotherapy was a last-ditch effort," said Dizon, now director of the Pelvic Malignancies Program at Lifespan Cancer Institute and director of Medical Oncology at Rhode Island Hospital.

Within 4 weeks the patient was off her pain medication. And she remains in remission today.

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When a patient beats the odds like this, there is an intense sense of relief, Dizon said.

But there's also a mystery that lingers.

"The scientist in us always drives to explain," to understand why something worked and who else it could work for, Dizon said. These cases are so rare that you can't, and don't, expect them for everyone, but when they happen, "you do start holding onto hope a lot more."

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Hope in oncology, however, must be cradled gently.

Anecdotes about the rare patient who defies the odds can skew the outlook for other patients and for oncologists. Positive outlooks must be in a delicate balance with honest prognoses.

It's critical that patients know "the good, the bad, and the ugly" potential outcomes of their disease, said Aulakh.

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Still, Soares noted, you also can't write these unlikely survivors off as flukes. They're the reminder that a prognosis can change, that this field is constantly moving forward.

And while oncologists can't take these exceptional responders for granted, these patients "feed your soul as an oncologist," Dizon said.