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Welcome to Yale Cancer Answers with your host doctor Anees Chagpar.

Yale Cancer Answers features the latest information on cancer care by welcoming oncologists and specialists who are on the forefront of the battle to fight cancer. This week it’s a conversation about cognitive decline after prostate cancer with doctor Herta Chao.

I hear you work at the VA. Tell us a little bit about the VA and about cancer services at the VA?

I feel very fortunate to work at the West Haven VA Cancer Center because it’s so closely affiliated with Yale Cancer Center, we basically can take advantage of a lot of the knowledge and expertise and...
resources that are available at your Cancer Center as well. A particularly important thing for the VA is that we’re a tertiary center, and many resources are available that are not necessarily available in the private sector. For instance, if veterans need transportation, we can actually ask our social worker to help. If a veteran needs additional support and therapy, we can actually ask the physical therapist to meet them in the Cancer Center, so it’s very tailored to veterans. Tell us a little bit about, you know when we think about cancer we kind of think of it ubiquitously but tell us about the prevalence of cancer in the veteran population and whether the the incidence of cancers and particular kinds of cancers are different in the veteran population as opposed to the general population? That’s a very very important point. I think we continue to learn. For many decades it was actually debated whether certain cancers are really related to an herbaside, like Agent Orange.
We know it was widely used during the Vietnam War and many veterans develop cancers that are unusually aggressive, unusually early in their lifetime, and it took many decades before it was recognized that Agent Orange is a carcinogen. 

For instance, I think soft tissue sarcoma, which is a connective tissue cancer, occurs early in our lifetime. It was recognized earlier that this is probably related to Agent Orange. Exposure has increased the risks of these veterans to develop these cancers. 

Prostate cancer, for instance, is so common among men and is the most frequent cancer among veterans. But for the many decades it was actually not acknowledged to be Agent Orange related. Not until 2008 there was a very important study done by Doctor Karen Shami at UCLA that actually proved the rate of prostate cancer and aggressiveness of prostate cancer was much higher in the veterans that were exposed to Agent Orange compared to veterans during the same era but not exposed to Agent Orange, so we know more and more that veterans may be
0:04:06.669 –> 0:04:09.316 at risk due to service related
0:04:09.316 –> 0:04:12.454 exposures to certain type of cancer,
0:04:12.46 –> 0:04:13.954 including lung cancer,
0:04:13.954 –> 0:04:15.478 prostate cancer, leukemia
0:04:15.478 –> 0:04:17.062 and lymphomas.
0:04:17.59 –> 0:04:20.712 These days for men and women
0:04:20.712 –> 0:04:24.386 who are in combat al ot of times
0:04:24.386 –> 0:04:27.104 we don’t think about
0:04:27.104 –> 0:04:29.524 people using a particular agent
0:04:29.524 –> 0:04:32.15 like Agent Orange in combat,
0:04:32.15 –> 0:04:35.657 but more it’s artillery,
0:04:35.66 –> 0:04:38.17 there’s more
0:04:38.17 –> 0:04:40.68 roadside bombs and so on.
0:04:40.68 –> 0:04:43.62 Are those also associated
0:04:43.62 –> 0:04:46.699 with a higher risk of cancers?
0:04:46.71 –> 0:04:52.87 I think we will find out very soon.
0:04:52.87 –> 0:04:56.062 Unfortunately my colleagues
0:04:56.062 –> 0:05:00.052 and myself have been
0:05:00.06 –> 0:05:03.185 unpleasantly surprised about how many
0:05:03.185 –> 0:05:07.696 aggressive cases of cancer we see in very
0:05:07.696 –> 0:05:11.17 young veterans like in the 40s and 50s,
0:05:11.17 –> 0:05:13.81 and a whole variety of
0:05:13.81 –> 0:05:15.922 different type of cancer,
0:05:15.93 –> 0:05:20.378 not just one specific cancer and the
0:05:20.378 –> 0:05:24.015 common thread of the story is really
0:05:24.015 –> 0:05:27.57 they were exposed to the burn pits,
0:05:27.57 –> 0:05:30.738 where apparently many things were burned,
0:05:30.74 –> 0:05:31.79 including
0:05:31.79 –> 0:05:39.14 what I was told was equipment that
0:05:39.14 –> 0:05:41.678 they wanted to be destroyed,
0:05:41.68 –> 0:05:43.8 and so there were many
toxic exposures and I fear, and I believe it will be true that we will see many other risk factors for different types of malignancies. I mean I don’t know whether we still see veterans who were exposed to Hiroshima and Nagasaki, but radiation also can expose you to a variety of malignancies too, right? Absolutely, in fact I can talk about this because one of my veterans really wanted to raise more awareness and he and his wife really wanted to publicly speak more about it. He was actually exposed, in regular service to radiation in the nuclear powered submarines, and unfortunately, he was in very close proximity he was in very close proximity to it and unfortunately now deals with a very aggressive cancer. They were fortunately able to control it with chemotherapy, but it does look like he will be on chemotherapy probably for rest of his life. What about other agents? Do we have any idea about the carcinogenic
potential of things like tear gas, which is commonly used both in combat and in civilian crowd control? I'm not an expert in this regard, so I have to apologize that I can't answer this question correctly. But I do think that we have to be aware about all the herbicides we are using still commercially and also in the private sector that I believe is under recognized so certainly there are a whole host of exposures that are unique to veterans and our military families and we have to remember that. And cancer is not uncommon even in the general public. And so when you are seeing patients at the VA, you're seeing people who may be at increased risk because of their military service. But you're also seeing people who are just diagnosed with cancers that they would get as part of the general population as well. We serve all veterans, whether they've been in combat or not and if they fulfill the criteria
0:08:26.862 to receive care at the VA, 0:08:29.8 we will absolutely see all veterans 0:08:32.77 that are eligible for VA health care. 0:08:37.293 We will also see the cancers 0:08:40.059 that are not related to service 0:08:43.272 connection and we will treat 0:08:46.61 these veterans, as much as we can do, 0:08:50.418 and one of the benefits for me to 0:08:54.7 be an oncologist at the VA, 0:08:57.56 is that we have many other people 0:09:00.368 helping me with their care. 0:09:02.79 One of the things that I do not miss is 0:09:06.5 the billing issues and medication issues. 0:09:10.41 I mean, as you know, 0:09:12.79 there so many 0:09:15.676 very very expensive 0:09:17.12 cancer medications, in fact, 0:09:18.824 we see a stream of 0:09:21.825 new patients into the VA because 0:09:24.009 of the very very expensive drug 0:09:26.505 prices and any veteran that finds 0:09:29.151 out that they can probably get 0:09:32.13 these medications for $9 copay 0:09:34.66 at the VA a month will come to 0:09:37.38 the VA. 0:09:40 For those who may or may not know, if you are 0:09:46.444 a veteran, you can get coverage 0:09:48.74 through the VA for your family, 0:09:51.38 your spouse, and your children? 0:09:55.209 That’s a very interesting question. 0:09:58.843 I ask the social worker all the
time and it turns out that spouses of 100% service connected veterans are eligible to get care at the VA until the immediate Medicare age. I believe that the children are not necessarily, but I think there might be mechanisms to take care of the children of veterans, but the spouses of 100% service connected veteran are eligible for care here at the VA. What does 100% service connection mean? It means that these veterans have a condition that disables them and it originated during the time of the military service. And you see patients with all kinds of cancers, and you treat them at the VA. Are there particular things that you’re thinking about in terms of their treatment in terms of side effects and so on that may be of particular concern to veterans? I think there’s several things that we do have to consider, for instance, service connected post traumatic stress disorder. We unfortunately take care of a fair number of veterans that suffer from post traumatic stress disorder,
and one of the things that we have to be aware of is sometimes when the cancer treatment itself causes stress, some of the PTSD symptoms can flare up and that is the reason why we really right from the beginning even before we start treatment, we actually frequently have palliative care and the health psychology team, in addition to psychiatry, if necessary, be involved in the management of the patient. For instance, when our veterans have to undergo complicated cancer surgery there is actually a service for elderly veterans called Champions where the geriatrician and the psychologists are involved before even the surgery and really prepare the patients for the surgery and follows them all along through the hospitalization and after discharge. Yeah, because I can imagine that for any patient cancer is a big diagnosis, it’s a scary diagnosis, but for veterans it may be even more so that it kind of adds to the stress that they’ve already gone
And that is one of the things where we are incredibly grateful for at the VA in Connecticut, we actually over the years we have developed a cancer care coordination system where the cancer care coordinator actually tracks patients that may develop cancer, but it’s still in the work up and the primary care physician or any provider can counsel the cancer care coordination team to try to expedite the work up and navigate for the patients. Yeah, that’s so important. We’re going to talk a lot more about cancer treatment and the side effects in our veterans right after we take a short break for a medical minute. Support for Yale Cancer Answers comes from AstraZeneca, dedicated to providing innovative treatment options for people living with cancer. Learn more@astrazeneca-us.com. This is a medical minute about smoking cessation. There are many obstacles to
face when quitting smoking.
As smoking involves the potent drug nicotine.
But it’s a very important lifestyle change,
especially for patients undergoing cancer treatment.
Quitting smoking has been shown to positively impact response to treatments,
decrease the likelihood that patients will develop second malignancies and increase rates of survival.
Tobacco treatment programs are currently being offered at federally designated comprehensive cancer centers and operate on the principles of the US Public Health Service.
All treatment components are evidence based and therefore all patients are treated with FDA approved first line medications for smoking cessation as well as smoking cessation counseling that stresses appropriate coping skills.
More information is available at yalecancercenter.org.
You’re listening to Connecticut public radio.
Welcome back to Yale Cancer Answers.
This is doctor Anees Chagpar and I’m joined tonight by my guest doctor Herta Chao.
We’re talking about cancer,
particularly in veterans and
right before the break you were telling me about the really fabulous services that the V A offers veterans who are diagnosed with cancer. It is really a comprehensive approach a multidisciplinary approach with social work, with geriatricians, with psychologists and psychiatrists to really provide the best treatment to veterans facing cancer. Because many of these veterans may face an increased risk of cancer due to military based exposure. The other thing that I think a lot of people may not know about the V A is that the V A actually supports a lot of research in the area of cancer. including veterans with cancer. One is the DoD Department of Defense has several grant mechanisms in many different cancers, including prostate cancer, lung cancer, breast cancer,
there’s another mechanism that’s called VA Merit. which is internally within the VA you can apply for funding to conduct research, and obviously there are others like the National Institutes of Health sponsored grants that physicians and researchers at the VA can apply to so I certainly benefited from these grant mechanisms.

One of my research interests is to look at the potential cognitive side effects and toxicity of prostate cancer treatment with hormonal therapy. And this actually was not something that I thought about, this was prompted by one of my patients who is a decorated Vietnam War veteran, and he developed aggressive prostate cancer at a fairly young age. He was just in his early 60s when he was diagnosed with metastatic prostate cancer and then found out that it was eligible for the VA benefits. He came to the VA and participated.
in several studies.

Finally, after three years taking care of him and his prostate cancer it was beautiful controlled.

He finally told me, I don’t want to be ungrateful, but I think these hormone shots are frying my brain.

He finally told me, I want to be ungrateful, but I think these hormone shots are frying my brain.

He finally told me, I don’t want to be ungrateful, but I think these hormone shots are frying my brain.

And I asked him, what do you mean?

And he said well, you know I’ve been busy all my life I can multitask, I can do so many things.

But since I started the hormone shot, I have to write down the 10 things I want to do within the next hour.

And that’s not me. I usually can think of multiple things and I can get everything done, but now I feel like I have to write down and remind myself what I want to do.

So then I thought, oh, that’s easy. I’ll refer you for neurocognitive testing and it turns out that he scored beautifully.

There was no deficit that we could find on regular neurocognitive testing. And then I started looking into
it and it’s still not well understood. I think that the breast cancer experts are way ahead. I mean the recognition that chemotherapy or hormonal therapy for breast cancer has been for many years already suspected and many studies actually support the suspicion that chemotherapy and hormonal therapy for breast cancer can cause chemo fog, or chemo brain. It’s not as well understood in prostate cancer so around 2009 I started looking into that. And the interesting part is that it’s not very easy to characterize these impact of hormone shots to prostate cancer, effects on the brain. If you do regular testing, whether it’s a paper and pencil or whether it’s on a computer, we have to be aware that there’s a certain amount of practice effect. So if you do it every three months, you know what to expect to do in the test.
so your test score may actually hold hold up despite the fact there might be a deficit. And that is probably true for many, many patients. That is what prompted me to think about what do other people do to study effects of anything in the brain, whether it’s depression, whether it’s dementia, whether it’s psychiatric illnesses. So that’s the reason why I approached my colleagues at the Yale Medical School in psychiatry that are involved in functional brain imaging to see whether hormone therapy can affect functional brain imaging. Just to clarify, what are these hormone shots that you’re giving for prostate cancer? What exactly is that? Because when we talk about hormonal therapy or endocrine therapy in breast cancer, that’s often a pill. Is it the same kind of thing? It’s not exactly the same because we know that if we just use a pill form like something called by Bicalutamide which is a testosterone receptor blocker, it usually is not sufficient to suppress
the effects on the prostate cancer cells.
So usually men with both prostate cancer
need to get something called Leuprolide,
which is, I’m going to use
the technical term LHRH
agonist, that can shut down the testosterone
production in a patient’s body
and we use these shots to cause the
testicles and also the remainder
to turn off testosterone.
So the key point being that the pills
many breast cancer patients take for
five or ten years is different than these
shots that men get for prostate cancer,
especially advanced prostate cancer.
They work through different mechanisms.
They have different targets as it were.
And so the side effects are pretty different,
so many women, while it’s true that
with chemotherapy they certainly
can get chemo brain or chemo fog,
it’s a little less common for
women taking endocrine therapy,
something like tamoxifen or some
of the aromatase inhibitors.
So how common is it that people can
get this chemo brain or chemo fog
or this cognitive decline when taking
an LHRH agonist for prostate cancer?
I think that’s a very hot topic right
now in prostate cancer research.
I think for the longest time,
and I would say like
10 years ago I was equally guilty.
We recognized the potential effect
on the brain and we really just
focus on like how to control cancer.
Because as Oncologists,
we want to control cancer.
Now I think we have to recognize
there so many different treatments,
and that’s the exciting part about
being a cancer doctor nowadays.
There’s so many different treatments
and you can treat cancer so many
different ways that I think
it’s actually very important to
know what each treatment could
cause in terms of side effects,
whether it’s inside the body
or whether it’s inside the
brain.
And what did you find with the
functional imaging study that you
did?
It’s still a very active,
ongoing study.
We’re trying to right now look at the
effect of lowering the testosterone
level what we call androgen deprivation,
My original pilot study only investigated effects in 30 veterans. 15 leuprolide injection and 15 as a control that underwent surgery or just radiation alone. It actually showed that the newer cognitive testing was the same. People scored the same, but when you look at the functional brain imaging just six months of hormone therapy for prostate cancer completely changed the way the brain shows activation. What does this mean? That’s something I think I need to find out, but it was very striking and to be honest I was a bit surprised because I initially thought if the newer cognitive test scores are the same, why should the brain MRI be different? And so I was educated that it can be different and apparently in other disease processes it can be different too. Thanks to the support of pilot studies through the Yale Cancer Center through Dr. Herbst, who supported this project, we were able to do an additional study of these 30 patients. It actually turns out that certain circuits that are connecting...
different brain areas to process things seem to be affected by hormone therapy for prostate cancer, so I suspect that the longer we give somebody hormone therapy for prostate cancer, the more effects we can see. Now that being said, I don’t want to create any fear among patients to get hormone therapy. I think it’s a very important treatment for prostate cancer, especially for stage four prostate cancer, and I think this is actually part of the cognitive side effects of hormone therapy. That’s something we need to study, and I believe not everybody is vulnerable to it. There are certain individual vulnerability that we have to identify and study. That was going to be one of my questions. Was that in that functional MRI study where you had some patients who had the LHRH agonist therapy and some patients who didn’t, and you found that there was a difference in the functional brain imaging between the two groups. Were all of the patients who had the LHRH against therapy still thinking that
the hormones were frying their brain or were some of them quite functional? I would say some of them were quite functional and that is the reason why I was surprised to find on the brain imaging study that they're still changes. And some were complaining of maybe hot flashes. So I think frequently we say, maybe you feel more fatigued because of hot flashes that you can get with those LHRH agonist, or whether there could be some component of depression affecting your cognitive out, but I think that’s the reason why it’s actually important to have something that’s not just subjective, it’s actually fairly objective for the patients to see actually on brain imaging, there are changes and while this is all still very much a topic of research, for my patient, who was the original one to actually complain to me about it, was very, very comforted actually, to know that it’s not just in his mind. It is actually something that we can see.
Dr. Herta Chao is the deputy director at the VA comprehensive Cancer Center and an associate professor of Medicine and medical oncology at the Yale School of Medicine.

If you have questions, the address is canceranswers@yale.edu.

And past editions of the program are available in audio and written form at Yalecancercenter.org.

We hope you’ll join us next week to learn more about the fight against cancer here on Connecticut public radio.