0:00:00 –> 0:00:01.96 Funding for Yale Cancer Answers
0:00:01.96 –> 0:00:03.92 is provided by Smilow Cancer
0:00:03.99 –> 0:00:05.69 Hospital and AstraZeneca.
0:00:07.73 –> 0:00:09.902 Welcome to Yale Cancer Answers with
0:00:09.902 –> 0:00:12.408 your host doctor Anees Chagpar.
0:00:12.41 –> 0:00:14.33 Yale Cancer Answers features the
0:00:14.33 –> 0:00:16.692 latest information on cancer care by
0:00:16.692 –> 0:00:18.204 welcoming oncologists and specialists
0:00:18.204 –> 0:00:20.741 who are on the forefront of the
0:00:20.741 –> 0:00:22.487 battle to fight cancer. This week,
0:00:22.49 –> 0:00:24.145 it's a conversation about sickle
0:00:24.145 –> 0:00:26.236 cell disease and cancer in pediatric
0:00:26.236 –> 0:00:28.091 patients with doctor Farzana Pashankar.
0:00:28.091 –> 0:00:30.729 Dr Pashankar is an associate
0:00:30.729 –> 0:00:32.554 professor of Pediatrics in hematology
0:00:32.554 –> 0:00:35.09 oncology at the Yale School of Medicine,
0:00:35.09 –> 0:00:38.21 where Doctor Chagpar is a
0:00:38.21 –> 0:00:40.29 professor of surgical oncology.
0:00:40.63 –> 0:00:43.006 Maybe we can start off by you telling
0:00:43.006 –> 0:00:45.548 us a little bit about yourself and
0:00:45.548 –> 0:00:48.131 how you got involved in doing what
0:00:48.131 –> 0:00:50.675 you do and what exactly do you do?
0:00:53.18 –> 0:00:57.797 Essentially I had a really long,
0:00:57.8 –> 0:00:59.261 circuitous career journey,
0:00:59.261 –> 0:01:03.291 but I got involved in doing pediatric
0:01:03.291 –> 0:01:07.029 oncology when I was training in England,
0:01:07.03 –> 0:01:10.622 after which I did a pediatric hematology
0:01:10.622 –> 0:01:12.666 oncology fellowship in Canada.
0:01:12.67 –> 0:01:14.29 And after fellowship,
0:01:14.29 –> 0:01:18.07 the two areas that I really loved
0:01:18.172 –> 0:01:21.058 and wanted to focus my career

0:01:21.058 –> 0:01:23.87 on were sickle cell disease

0:01:23.87 –> 0:01:25.208 and solid tumors

0:01:25.21 –> 0:01:27.904 and development of clinical

0:01:27.904 –> 0:01:30.655 trials and improving care for children

0:01:30.655 –> 0:01:33.277 with sickle cell disease and cancer,

0:01:33.28 –> 0:01:34.765 particularly solid tumors.

0:01:34.765 –> 0:01:38.23 So those are the two areas that

0:01:38.316 –> 0:01:40.446 I have focused on in

0:01:40.45 –> 0:01:44.473 my career for the last

0:01:44.48 –> 0:01:47.792 about 17 to 20 years and my

0:01:47.792 –> 0:01:51.38 passion primarily has been to focus on

0:01:51.38 –> 0:01:54.669 development of clinical trials for children for

0:01:54.67 –> 0:01:57.118 certain rare types of solid tumors,

0:01:57.12 –> 0:01:59.466 and also in bringing new and

0:01:59.466 –> 0:02:01.527 innovative therapies for sickle cell

0:02:01.527 –> 0:02:03.647 disease to our patient population.

0:02:03.65 –> 0:02:04.868 So maybe we

0:02:04.87 –> 0:02:06.37 can start with that.

0:02:06.37 –> 0:02:08.62 Is there much overlap between sickle

0:02:08.687 –> 0:02:10.987 cell disease and pediatric cancers?

0:02:10.99 –> 0:02:14.246 I mean, do children get sickle cell disease?

0:02:14.25 –> 0:02:16.665 Does sickle cell kind of lead to

0:02:16.665 –> 0:02:19.455 cancer or are these just two separate

0:02:19.455 –> 0:02:21.975 passions of yours that happen to

0:02:22.05 –> 0:02:24.45 coincide in the same individual?

0:02:25.74 –> 0:02:28.86 These are two separate passions,

0:02:28.86 –> 0:02:31.524 and because in Pediatrics we

0:02:31.524 –> 0:02:34.32 train in both hematology and oncology,

0:02:34.32 –> 0:02:36.264 these are two passions which

0:02:38.581 –> 0:02:40.946 developed during my training,

0:02:40.95 –> 0:02:44.26 but it is not connected in any way in terms

0:02:44.34 –> 0:02:47.19 of children with sickle cell disease being
0:02:47.19 –> 0:02:49.566 more prone to getting cancer or
0:02:49.566 –> 0:02:51.967 children with cancer more prone to
0:02:51.967 –> 0:02:54.205 having any issues with sickle cell.
0:02:56.49 –> 0:02:59.496 Let's talk about each of the two in turn
0:02:59.496 –> 0:03:02.222 and let's start maybe with
0:03:02.222 –> 0:03:04.39 talking about pediatric cancers.
0:03:06.982 –> 0:03:09.44 Any time we hear about children getting cancer,
0:03:09.44 –> 0:03:10.988 the uniform emotion that
0:03:10.988 –> 0:03:12.893 people feel is heartbreak.
0:03:12.893 –> 0:03:15.364 So tell us a little bit more
0:03:15.364 –> 0:03:17.59 about how you get involved.
0:03:17.59 –> 0:03:20.894 I know so many medical
0:03:20.894 –> 0:03:23.787 students come up to me and they say,
0:03:23.79 –> 0:03:26.604 how can you possibly dedicate your career
0:03:26.61 –> 0:03:29.277 to doing something that is so heartbreaking,
0:03:31.518 –> 0:03:34.226 but honestly after doing this for over 20 years
0:03:34.226 –> 0:03:36.512 this is such a rewarding journey.
0:03:36.52 –> 0:03:39.192 It is the time that a lot of
0:03:39.192 –> 0:03:41.089 families are going through
0:03:41.09 –> 0:03:43.772 probably the most intense and difficult
0:03:43.772 –> 0:03:46.663 time of their life and to be able
0:03:46.663 –> 0:03:49.968 to be a part of it and to help them
0:03:49.968 –> 0:03:52.512 navigate and think about the treatment
0:03:52.52 –> 0:03:54.837 decisions for their child and to be
0:03:54.837 –> 0:03:57.528 able to treat their child effectively,
0:03:57.53 –> 0:03:59.13 honestly, I don't think
0:03:59.13 –> 0:04:01.13 there's a substitute for that.
0:04:01.13 –> 0:04:03.53 I think it's so emotionally rewarding.
0:04:03.53 –> 0:04:06.33 It is also heartbreaking at times.
0:04:06.33 –> 0:04:09.05 I mean, we do have children who could

0:04:09.05 –> 0:04:11.95 have a recurrence and it is
0:04:11.95 –> 0:04:14.914 a lot of intense time thinking about
0:04:14.914 –> 0:04:17.836 not only the management but also
0:04:17.836 –> 0:04:20.19 supporting these families through that.
0:04:20.19 –> 0:04:22.98 But the relationships I've built with
0:04:23.06 –> 0:04:25.46 even the children that we've lost,
0:04:25.46 –> 0:04:26.27 the relationships
0:04:26.27 –> 0:04:28.295 built with those parents
0:04:28.295 –> 0:04:29.51 is just unbelievable.
0:04:29.51 –> 0:04:31.54 And after losing the child,
0:04:31.54 –> 0:04:33.076 they still think of
0:04:33.076 –> 0:04:36.799 us as being part of their family.
0:04:36.8 –> 0:04:39.327 And I think that bond is
0:04:39.327 –> 0:04:41.26 so valuable and precious.
0:04:41.26 –> 0:04:44.5 So yes, it can be heartbreaking at times,
0:04:44.5 –> 0:04:46.52 but it's also extremely rewarding.
0:04:46.52 –> 0:04:48.998 And today I would say that we cure
0:04:48.998 –> 0:04:50.65 about 85%
0:04:50.65 –> 0:04:52.53 of children with cancer very successfully.
0:04:52.53 –> 0:04:54.665 So clearly we have done a really
0:04:54.665 –> 0:04:57.12 good job at trying to make advances
0:04:57.12 –> 0:04:59.322 and improve the life of these
0:04:59.399 –> 0:05:01.547 children diagnosed with cancer.
0:05:03.43 –> 0:05:06.438 And I think that's such a key point is that
0:05:06.438 –> 0:05:08.574 whereas many people will
0:05:08.574 –> 0:05:11.33 think of cancer as a death sentence,
0:05:11.33 –> 0:05:13.244 now more and more what we're
0:05:13.244 –> 0:05:15.876 finding out in a variety of cancers
0:05:15.876 –> 0:05:18.432 is that really we're beginning to
0:05:18.432 –> 0:05:20.847 discover that many of these cancers
0:05:20.85 –> 0:05:23.28 are treatable and with good outcomes,

0:05:23.28 –> 0:05:25.71 but you're interested in solid tumors,
0:05:25.71 –> 0:05:28.782 so tell us more about the solid tumors
0:05:28.782 –> 0:05:32.119 that occur in Pediatrics and what kind
0:05:32.119 –> 0:05:35.43 of treatments we have to offer these kids.
0:05:35.43 –> 0:05:36.902 What the prognosis is,
0:05:36.902 –> 0:05:38.742 and the other thing that
0:05:38.742 –> 0:05:40.699 I'm always curious about
0:05:40.7 –> 0:05:43.34 on this show, we spend so much time
0:05:43.34 –> 0:05:45.559 talking about personalized medicine.
0:05:45.56 –> 0:05:47.99 The fact that now
0:05:47.99 –> 0:05:50.937 we've begun to really unlock the
0:05:50.94 –> 0:05:52.364 genomic abnormalities that
0:05:52.364 –> 0:05:54.5 occur in cancers we're able to
0:05:54.561 –> 0:05:56.577 better target these abnormalities.
0:05:56.58 –> 0:06:00.47 Can we do the same thing in kids and
0:06:00.567 –> 0:06:04.354 is that resulting in higher cure rates?
0:06:04.86 –> 0:06:08.82 Great question and a lot to unpack.
0:06:08.82 –> 0:06:12.131 In terms of solid tumors, they
0:06:15.97 –> 0:06:19.21 really change across the age spectrum,
0:06:19.21 –> 0:06:21.989 so the solid tumors that we see
0:06:21.989 –> 0:06:25.144 in the much younger child are
0:06:25.144 –> 0:06:27.628 tumors such as neuroblastoma,
0:06:27.63 –> 0:06:29.606 Wilms tumors, retinoblastoma so
0:06:29.606 –> 0:06:32.076 much more embryonal based tumors,
0:06:32.08 –> 0:06:34.64 and then as you gradually
0:06:34.64 –> 0:06:37.4 advance and you're coming to the
0:06:37.4 –> 0:06:38.78 prepubertal young adolescence,
0:06:38.78 –> 0:06:41.08 we start seeing more tumors
0:06:41.08 –> 0:06:44.097 such as the sarcomas, so the osteosarcoma
0:06:44.097 –> 0:06:47.06 the soft tissue sarcomas
0:06:47.06 –> 0:06:49.355 which have an overlap

0:06:49.355 –> 0:06:52.12 with the adult population as well,
0:06:52.12 –> 0:06:54.42 and in addition, we see,
0:06:54.42 –> 0:06:55.863 besides these sarcomas,
0:06:55.863 –> 0:06:58.268 of course we see Rhabdomyosarcoma
0:06:58.268 –> 0:07:00.644 which occurs across the age
0:07:00.644 –> 0:07:02.874 spectrum from childhood onto the
0:07:02.874 –> 0:07:05.029 adolescent young adult population.
0:07:05.03 –> 0:07:07.376 So in terms of solid tumors,
0:07:07.38 –> 0:07:09.564 really the main areas or the
0:07:09.564 –> 0:07:12.351 main types of solid tumors we see
0:07:12.351 –> 0:07:14.436 would be the embryonal tumors.
0:07:14.44 –> 0:07:16.4 As I already mentioned and
0:07:16.4 –> 0:07:18.36 then sort of the sarcomas
0:07:18.36 –> 0:07:21.097 and the bone sarcomas.
0:07:21.1 –> 0:07:23.518 Those are the two big groups
0:07:23.518 –> 0:07:25.809 of solid tumors that we see.
0:07:25.81 –> 0:07:28.882 We also see interestingly a lot of rare
0:07:28.882 –> 0:07:31.62 tumors and one of my particular area
0:07:31.62 –> 0:07:34.429 of interest has been in rare tumors,
0:07:34.43 –> 0:07:36.44 and I've been very involved
0:07:36.44 –> 0:07:38.048 in developing clinical trials
0:07:38.05 –> 0:07:40.534 for these children with rare tumors
0:07:40.534 –> 0:07:42.63 through the Children's oncology group,
0:07:42.63 –> 0:07:45.174 so the rare tumors that we see are
0:07:45.174 –> 0:07:47.619 things like nasopharyngeal carcinoma,
0:07:47.62 –> 0:07:49.432 adrenocortical carcinoma, thyroid cancer,
0:07:49.432 –> 0:07:52.584 which of course can occur in adults
0:07:52.584 –> 0:07:55.512 but also starts in young adolescence.
0:07:55.52 –> 0:07:58.425 So we see several of those patients,
0:07:58.43 –> 0:08:00.872 and now we've started seeing some
0:08:00.872 –> 0:08:03.84 of the tumors that are adult tumors

0:08:04.672 –> 0:08:06.336 earlier in Pediatrics,

0:08:06.34 –> 0:08:08.9 such as even colorectal carcinoma.

0:08:08.9 –> 0:08:11.497 So that's sort of the spectrum of

0:08:11.497 –> 0:08:14.747 tumors we see in pediatric solid tumors.

0:08:14.75 –> 0:08:17.198 I've not included brain tumors because

0:08:17.198 –> 0:08:19.35 we almost separate brain tumors,

0:08:19.35 –> 0:08:21.858 just like we do leukemia and lymphomas.

0:08:21.86 –> 0:08:25.196 And I don't treat brain tumors.

0:08:25.2 –> 0:08:28.126 I focus on the extracranial solid tumors,

0:08:28.13 –> 0:08:31.218 so those are the ones I've just mentioned

0:08:31.218 –> 0:08:33.702 with regards to the treatment and

0:08:33.702 –> 0:08:36.15 the role of personalized medicine or

0:08:36.225 –> 0:08:39.09 immunotherapy in treating these cancers.

0:08:41.65 –> 0:08:43.79 Again, the role of personalized medicine

0:08:44.57 –> 0:08:47.3 is very well known in the adult oncologic world.

0:08:48.91 –> 0:08:51.466 In Pediatrics we still do profile

0:08:51.47 –> 0:08:54.459 most of our patients with solid tumors,

0:08:54.46 –> 0:08:56.595 and there have been tumors

0:08:56.595 –> 0:08:58.303 which have happened recently and

0:08:58.31 –> 0:09:00.596 there's a lot of excitement on

0:09:00.596 –> 0:09:02.683 tumors where there's a specific

0:09:02.683 –> 0:09:05.138 targeted drug that is available,

0:09:05.14 –> 0:09:09.109 and one classic example of this is the

0:09:09.11 –> 0:09:09.996 TRK fusion cancers

0:09:09.996 –> 0:09:12.654 where there is a specific drug

0:09:14.995 –> 0:09:17.743 that has been developed with

0:09:17.743 –> 0:09:19.759 excellent outstanding results.

0:09:19.76 –> 0:09:23.148 So TRK fusion cancers can occur

0:09:23.15 –> 0:09:26.734 from infants where you

0:09:26.734 –> 0:09:29.439 have infantile fibrosarcoma's that occur in

0:09:29.44 –> 0:09:32.338 the first year of life,

0:09:32.34 –> 0:09:34.068 and then TRK Fusion

0:09:34.068 –> 0:09:36.66 sarcomas are also seen in older

0:09:36.751 –> 0:09:39.119 adolescents and young adults,

0:09:39.12 –> 0:09:40.832 so in specific situations

0:09:40.832 –> 0:09:44.044 we do also use what the adults

0:09:44.044 –> 0:09:46.24 use much more frequently,

0:09:46.24 –> 0:09:49.656 which is a very targeted therapy based on

0:09:49.66 –> 0:09:52.048 tumor profiling.

0:09:55.04 –> 0:09:57.15 How does prognosis vary

0:09:57.15 –> 0:09:58.838 amongst the pediatric cancers?

0:09:58.84 –> 0:10:00.95 Because you've kind of mentioned

0:10:00.95 –> 0:10:02.638 this whole spectrum,

0:10:02.64 –> 0:10:05.01 we have the leukemia lymphoma

0:10:05.01 –> 0:10:07.562 as one separate group and brain

0:10:07.562 –> 0:10:09.807 tumors as another separate group.

0:10:09.81 –> 0:10:12.799 But even within the non cranial solid

0:10:12.799 –> 0:10:16.049 tumors in pediatric populations

0:10:16.05 –> 0:10:19.326 we're looking at everything from eye tumors,

0:10:19.33 –> 0:10:20.755 retinoblastoma's to kidney

0:10:20.755 –> 0:10:23.605 tumors like Wilms tumor

0:10:23.605 –> 0:10:24.94 to sarcomas.

0:10:24.94 –> 0:10:29.143 So how do these vary in terms of prognosis,

0:10:29.15 –> 0:10:33.362 and have we seen a shift in terms of

0:10:34.268 –> 0:10:36.962 moving towards being able to treat

0:10:36.962 –> 0:10:39.92 these children better with new therapies?

0:10:41.1 –> 0:10:44.439 Yeah, so it is a whole spectrum.

0:10:44.44 –> 0:10:47.296 As you've already mentioned,

0:10:47.3 –> 0:10:50.639 I think we've done really well in

0:10:50.64 –> 0:10:53.496 some of these tumors.

0:10:53.5 –> 0:10:56.272 For example, in patients with retinoblastoma

0:10:56.272 –> 0:10:58.75 you have an excellent outcome,

0:10:58.75 –> 0:11:01.195 particularly now with intra arterial

0:11:01.195 –> 0:11:03.64 chemotherapy delivering very focused

0:11:03.705 –> 0:11:05.9 chemotherapy.

0:11:05.9 –> 0:11:08.938 We've also reduced the issue with long

0:11:08.938 –> 0:11:12.189 term side effects giving systemic therapy.

0:11:14.79 –> 0:11:17.744 Treatment has evolved

0:11:17.744 –> 0:11:20.266 significantly over the last maybe 10-15

0:11:20.266 –> 0:11:22.636 years with the development of

0:11:22.636 –> 0:11:25.207 an antibody called dinutuximab

0:11:25.21 –> 0:11:27.978 which focuses on the GD2

0:11:27.978 –> 0:11:31.29 which is expressed by neuroblastoma cells.

0:11:31.29 –> 0:11:34.466 So now we have this multi modality therapy

0:11:34.466 –> 0:11:37.799 that we do in addition to chemotherapy,

0:11:37.8 –> 0:11:38.72 surgery, and radiation.

0:11:38.72 –> 0:11:42.4 We also have this immunotherapy that is done

0:11:42.4 –> 0:11:43.546 in combination

0:11:43.546 –> 0:11:45.838 particularly for those who have high

0:11:45.838 –> 0:11:48.138 risk neuroblastoma in Wilms tumor,

0:11:48.14 –> 0:11:50.6 our outcomes have always been excellent,

0:11:50.6 –> 0:11:52.65 and we're continuing to improve

0:11:52.65 –> 0:11:53.47 those outcomes.

0:11:53.47 –> 0:11:55.52 And similarly I didn't

0:11:55.52 –> 0:11:57.16 mention germ cell tumors,

0:11:57.16 –> 0:12:00.03 which honestly, is

0:12:00.03 –> 0:12:02.49 a really strong interest of mine,

0:12:02.49 –> 0:12:06.18 so we do very well in germ cell tumors.

0:12:06.18 –> 0:12:08.64 And in all these four categories,

0:12:08.64 –> 0:12:11.51 I would say we have excellent outcomes.

0:12:11.51 –> 0:12:12.424 In sarcomas,

0:12:12.424 –> 0:12:15.166 I think we still have challenges.

0:12:15.17 –> 0:12:17.918 And the challenge really depends on

0:12:17.918 –> 0:12:21.28 the time of presentation,

0:12:21.28 –> 0:12:23.036 what the staging is, and

0:12:23.036 –> 0:12:25.231 for patients who present

0:12:25.231 –> 0:12:27.389 with metastatic sarcomas,

0:12:27.39 –> 0:12:29.93 be it Rhabdomyosarcoma or osteosarcoma,

0:12:29.93 –> 0:12:33.02 we still are challenged in terms

0:12:33.02 –> 0:12:36.039 of long term outcomes at times,

0:12:36.04 –> 0:12:39.94 and we have numerous clinical trials

0:12:39.94 –> 0:12:43.09 looking at different options which

0:12:46.24 –> 0:12:48.856 this is where we are

0:12:48.856 –> 0:12:50.721 looking to improve our outcomes

0:12:50.721 –> 0:12:51.84 by newer therapies.

0:12:51.84 –> 0:12:54.69 And as you mentioned, personalized therapies are

0:12:55.09 –> 0:12:57.575 so important to really try to get

0:12:57.575 –> 0:13:00.029 people involved in clinical trials

0:13:00.029 –> 0:13:02.669 to really move those therapies forward,

0:13:02.67 –> 0:13:05.726 but it's really great to hear that

0:13:05.726 –> 0:13:08.26 we're moving in the right direction,

0:13:08.26 –> 0:13:11.444 at least for the majority of solid tumors in kids.

0:13:11.45 –> 0:13:14.154 We're going to take a short

0:13:14.154 –> 0:13:17.07 break for medical minute and then learn

0:13:17.07 –> 0:13:19.83 more not only about pediatric cancer,

0:13:19.83 –> 0:13:22.637 but also delve into your interest in

0:13:22.637 –> 0:13:25.13 sickle cell disease right after this break.

0:13:25.13 –> 0:13:27.674 Please stay tuned for more

0:13:27.674 –> 0:13:29.37 with my guest Doctor Farzana Pashankar.

0:13:29.37 –> 0:13:32.338 Funding for Yale Cancer

0:13:32.338 –> 0:13:34.883 Answers comes from AstraZeneca, working

0:13:34.883 –> 0:13:38.267 to eliminate cancer as a cause of death.

0:13:38.27 –> 0:13:41.77 Learn more at astrazeneca-us.com.

0:13:41.77 –> 0:13:44.194 Genetic testing can be useful for

0:13:44.194 –> 0:13:46.568 people with certain types of cancer
0:13:46.568 –> 0:13:48.962 that seem to run in their families.
0:13:48.97 –> 0:13:51.268 Genetic counseling is a process that
0:13:51.268 –> 0:13:53.222 includes collecting a detailed personal
0:13:53.222 –> 0:13:55.742 and family history or risk assessment and
0:13:55.742 –> 0:13:58.069 a discussion of genetic testing options.
0:13:58.07 –> 0:14:01.1 Only about 5 to 10% of all cancers
0:14:01.1 –> 0:14:02.994 are inherited, and genetic testing
0:14:02.994 –> 0:14:04.884 is not recommended for everyone.
0:14:04.89 –> 0:14:07.02 Individuals who have a personal and
0:14:07.02 –> 0:14:08.91 or family history that includes
0:14:08.91 –> 0:14:10.95 cancer at unusually early ages,
0:14:10.95 –> 0:14:11.778 multiple relatives
0:14:11.778 –> 0:14:14.262 on the same side of the
0:14:14.262 –> 0:14:16.379 family with the same cancer,
0:14:16.38 –> 0:14:18.45 more than one diagnosis of
0:14:18.45 –> 0:14:20.52 cancer in the same individual,
0:14:20.52 –> 0:14:23.061 rare cancers or family history of a
0:14:23.061 –> 0:14:25.158 known altered cancer predisposing gene
0:14:25.158 –> 0:14:27.978 could be candidates for genetic testing.
0:14:27.98 –> 0:14:30.075 Resources for genetic counseling and
0:14:30.075 –> 0:14:32.17 testing are available at federally
0:14:32.236 –> 0:14:33.475 designated comprehensive cancer
0:14:33.475 –> 0:14:35.953 centers such as Yale Cancer Center
0:14:35.953 –> 0:14:37.908 and at Smilow Cancer Hospital.
0:14:37.91 –> 0:14:40.265 More information is available at
0:14:40.265 –> 0:14:41.678 yalecancercenter.org. You're listening
0:14:41.678 –> 0:14:43.399 to Connecticut Public Radio.
0:14:43.4 –> 0:14:43.76 Welcome
0:14:43.76 –> 0:14:45.56 back to Yale Cancer Answers.
0:14:45.56 –> 0:14:47.648 This is doctor Anees Chagpar

0:14:47.648 –> 0:14:49.846 and I'm joined tonight by my
0:14:49.846 –> 0:14:51.676 guest Doctor Farzana Pashankar.
0:14:51.68 –> 0:14:53.705 We're talking about sickle cell
0:14:53.705 –> 0:14:55.73 disease and cancer in pediatric
0:14:55.801 –> 0:14:57.655 patients. Before the break for
0:14:57.655 –> 0:14:59.925 any of you who missed it,
0:14:59.925 –> 0:15:01.875 there is no connection between sickle
0:15:01.875 –> 0:15:03.92 cell disease and pediatric cancers,
0:15:03.92 –> 0:15:05.68 except that our guest happens
0:15:05.68 –> 0:15:07.88 to be an expert in both.
0:15:07.88 –> 0:15:10.688 Right before the break we were
0:15:10.688 –> 0:15:13.4 talking about pediatric cancers and the fact
0:15:13.4 –> 0:15:17.285 that some kids get solid tumors.
0:15:17.29 –> 0:15:20.677 This must not be very common, right?
0:15:20.677 –> 0:15:24.646 How common are pediatric cancers?
0:15:24.65 –> 0:15:26.76 Especially the non hematologic cancers?
0:15:28.45 –> 0:15:31.187 I think of course each one of those
0:15:31.187 –> 0:15:33.378 cancers is overall pretty rare
0:15:33.378 –> 0:15:36.043 and even leukemias, which are the
0:15:36.043 –> 0:15:38.148 most common pediatric cancer we say
0:15:38.15 –> 0:15:41.111 happens one in a million.
0:15:41.111 –> 0:15:43.637 So the solid tumors are much rarer
0:15:44.906 –> 0:15:47.86 and each one has a different frequency,
0:15:47.86 –> 0:15:50.932 so it's hard to give a
0:15:50.932 –> 0:15:53.768 number for all of them combined.
0:15:55.98 –> 0:15:57.752 This is very interesting
0:15:57.752 –> 0:15:59.967 because as you may know,
0:15:59.97 –> 0:16:03.506 there's a lot of interest in rare cancers,
0:16:03.51 –> 0:16:06.862 and the NIH was looking at developing a
0:16:06.862 –> 0:16:10.393 rare Cancer Institute in order to try and
0:16:10.393 –> 0:16:13.7 improve the outcomes in these rare cancers.

0:16:13.7 –> 0:16:16.418 And when we were looking at
0:16:16.418 –> 0:16:18.57 defining what rare cancers is,
0:16:18.57 –> 0:16:21.755 it's very clear up front that every
0:16:21.755 –> 0:16:24.779 pediatric cancer is rare in that sense,
0:16:24.78 –> 0:16:26.604 but the solid tumors,
0:16:26.604 –> 0:16:27.06 particularly,
0:16:27.06 –> 0:16:30.07 many of the tumors we discussed are
0:16:33.51 –> 0:16:35.66 even much rarer than leukemia,
0:16:35.66 –> 0:16:38.279 which is already
0:16:38.28 –> 0:16:38.966 pretty uncommon.
0:16:39.31 –> 0:16:41.446 And I'm sure that every parent
0:16:41.446 –> 0:16:43.258 out there thinks that their
0:16:43.258 –> 0:16:45.136 child is one in a million,
0:16:45.14 –> 0:16:46.6 but really wouldn't want their
0:16:46.6 –> 0:16:49.375 child to be one in a million in
0:16:49.375 –> 0:16:50.626 this particular circumstance.
0:16:50.63 –> 0:16:53.087 And one of the
0:16:53.087 –> 0:16:54.739 questions that comes up and
0:16:54.74 –> 0:16:56.868 you mentioned that you had an
0:16:56.868 –> 0:16:58.86 interest in clinical trials,
0:16:58.86 –> 0:17:00.38 especially in rare tumors,
0:17:00.38 –> 0:17:03.505 is that so much of the data that
0:17:03.505 –> 0:17:06.165 we get that leads to best practice
0:17:06.165 –> 0:17:09.044 that dictates how we treat cancer
0:17:09.044 –> 0:17:10.976 comes from clinical trials.
0:17:10.98 –> 0:17:13.766 And when you have these tumors that
0:17:13.766 –> 0:17:17.256 are so rare that are one in a million,
0:17:17.26 –> 0:17:19.9 how on Earth do we get the data
0:17:19.9 –> 0:17:22.029 to actually know what's best
0:17:22.029 –> 0:17:24.334 practice to treat our children,
0:17:24.34 –> 0:17:27.084 and for every parent going through this,

0:17:27.09 –> 0:17:29.834 I mean that is their deepest anxiety.
0:17:31.16 –> 0:17:34.088 That's a very good point
0:17:34.088 –> 0:17:38.385 and I think what I must say is that in
0:17:38.385 –> 0:17:41.222 pediatric oncology we have honestly and I
0:17:41.222 –> 0:17:44.596 am not taking all the any credit for this,
0:17:44.596 –> 0:17:47.734 but we have done an amazing job at
0:17:47.734 –> 0:17:50.164 being able to conduct clinical trials
0:17:50.164 –> 0:17:53.448 and the way we've done this is through
0:17:53.448 –> 0:17:55.438 the development of a consortium
0:17:55.438 –> 0:17:57.428 called the Children's Oncology Group,
0:17:57.43 –> 0:17:59.605 which really has about 230
0:17:59.605 –> 0:18:01.345 institutions across the United States,
0:18:01.35 –> 0:18:04.255 Australia, New Zealand and Canada
0:18:04.255 –> 0:18:08.068 and the beauty of this is that
0:18:08.068 –> 0:18:10.48 as a group then we can,
0:18:10.48 –> 0:18:12.34 because each individual
0:18:12.34 –> 0:18:14.82 institution will only have
0:18:14.82 –> 0:18:17.142 a patient very rarely with a
0:18:17.142 –> 0:18:18.69 particular type of cancer,
0:18:18.69 –> 0:18:21.786 we can bring all of us together,
0:18:21.79 –> 0:18:23.932 and we can then get the numbers to
0:18:23.932 –> 0:18:26.403 be able to conduct a clinical
0:18:26.403 –> 0:18:28.367 trial and more importantly,
0:18:28.37 –> 0:18:30.315 conduct some randomized clinical trials
0:18:30.315 –> 0:18:33.34 to be able to answer the question of
0:18:33.34 –> 0:18:35.699 which treatment is the best and most
0:18:35.769 –> 0:18:38.039 appropriate for these rare cancers.
0:18:38.04 –> 0:18:40.332 So the children's Oncology Group has
0:18:40.332 –> 0:18:43.14 existed for a while and we
0:18:43.14 –> 0:18:45.145 have designed clinical trials
0:18:45.15 –> 0:18:47.436 on each type of pediatric cancer,

0:18:47.44 –> 0:18:49.305 but more recently what is happening

0:18:49.305 –> 0:18:51.63 that I am very

0:18:52.218 –> 0:18:55.667 happy to be involved with is that we are now

0:18:55.667 –> 0:18:57.715 looking at international collaborations.

0:18:57.72 –> 0:19:00.331 So for example in germ cell tumors

0:19:00.331 –> 0:19:02.766 because germ cell tumors are again so

0:19:02.766 –> 0:19:05.583 rare even in the US and Canada and

0:19:05.583 –> 0:19:08.253 Australia we cannot have the appropriate

0:19:08.253 –> 0:19:10.622 numbers to do a randomized trial.

0:19:10.622 –> 0:19:13.34 So currently we are conducting two trials,

0:19:13.34 –> 0:19:15.52 one for low risk and

0:19:15.52 –> 0:19:16.645 intermediate risk,

0:19:16.645 –> 0:19:18.895 and one for high risk.

0:19:20.38 –> 0:19:22.23 So we've collaborated with the

0:19:22.23 –> 0:19:24.15 UK with India with Australia,

0:19:24.15 –> 0:19:26.4 New Zealand and we are all

0:19:26.4 –> 0:19:27.9 running the same trials,

0:19:27.9 –> 0:19:30.908 so that again we can bring all this

0:19:30.908 –> 0:19:33.189 information together and be able to

0:19:33.189 –> 0:19:35.014 make advances for future patients.

0:19:35.396 –> 0:19:36.148 I think that's so critical.

0:19:38.02 –> 0:19:40.716 You know one of the issues that we

0:19:40.716 –> 0:19:43.296 face in adult tumors, however, is,

0:19:43.296 –> 0:19:46.4 although all of us know that clinical trials

0:19:46.4 –> 0:19:48.724 are the drivers of improved care

0:19:48.73 –> 0:19:50.728 it's how we make practice

0:19:50.73 –> 0:19:52.977 changing discovery, is that still there is

0:19:52.977 –> 0:19:55.694 a reluctance on the part of some patients

0:19:55.694 –> 0:19:57.384 to participate in clinical trials.

0:19:57.39 –> 0:20:00.575 So if you look across the board,

0:20:00.58 –> 0:20:02.77 our rate of clinical trial

0:20:02.77 –> 0:20:05.28 accrual is somewhere South of 5%,

0:20:05.28 –> 0:20:08.376 and with children I mean I can imagine

0:20:08.376 –> 0:20:10.988 that parents have obvious anxiety when

0:20:10.988 –> 0:20:14.24 you talk about clinical trials,

0:20:14.24 –> 0:20:17.228 but I understand that the rate

0:20:17.228 –> 0:20:18.722 is much higher for accrual

0:20:18.73 –> 0:20:20.64 to these clinical trials.

0:20:20.64 –> 0:20:22.92 Honestly in Pediatrics,

0:20:22.92 –> 0:20:24.83 the rate is significantly higher,

0:20:24.83 –> 0:20:27.493 and I think part of the reason

0:20:27.493 –> 0:20:30.92 at least at Yale,

0:20:30.92 –> 0:20:33.968 of all the patients eligible for a trial,

0:20:33.97 –> 0:20:34.724 because sometimes,

0:20:34.724 –> 0:20:37.74 of course a trial may not be available

0:20:37.816 –> 0:20:40.066 for that particular type of tumor.

0:20:40.07 –> 0:20:41.97 But for any eligible patient,

0:20:41.97 –> 0:20:45.023 we enroll up to 80% of the children

0:20:45.023 –> 0:20:47.309 who are eligible for a trial.

0:20:47.31 –> 0:20:50.054 When you're taking care of

0:20:50.06 –> 0:20:51.95 your child, who has cancer

0:20:51.95 –> 0:20:54.484 I think the motivation from the parents

0:20:54.484 –> 0:20:56.803 is very different than maybe

0:20:56.803 –> 0:20:58.748 the motivation for yourself.

0:20:58.75 –> 0:20:59.833 I'm not sure,

0:20:59.833 –> 0:21:01.999 but clearly we all do go

0:21:01.999 –> 0:21:04.418 above and beyond for our kids.

0:21:04.42 –> 0:21:06.31 Then we probably even do

0:21:06.31 –> 0:21:07.066 for ourselves.

0:21:07.066 –> 0:21:09.712 And I think that that desire

0:21:09.72 –> 0:21:12.736 to figure out the best treatment,

0:21:12.74 –> 0:21:14.954 especially when we're talking

0:21:14.954 –> 0:21:17.279 about rare diseases is so important.
0:21:17.28 –> 0:21:20.808 And I think the other piece is that
0:21:20.81 –> 0:21:22.562 parents sometimes have trepidation
0:21:22.562 –> 0:21:25.19 about what is the
0:21:25.27 –> 0:21:27.496 right answer to treat my child,
0:21:27.5 –> 0:21:29.846 especially when all of these cancers
0:21:29.846 –> 0:21:32.368 are so rare and clinical trials
0:21:32.368 –> 0:21:35.014 gives you some modicum of this
0:21:35.02 –> 0:21:37.528 actually might be best practice because,
0:21:37.53 –> 0:21:38.655 as you say,
0:21:38.655 –> 0:21:40.53 all of these professionals get
0:21:40.53 –> 0:21:42.958 together in designing these trials,
0:21:42.96 –> 0:21:46.304 so they've put in that brain trust of,
0:21:46.31 –> 0:21:49.052 you know this is potentially best
0:21:49.052 –> 0:21:51.66 practice or best practice versus
0:21:51.66 –> 0:21:54.316 what best practice will be and we want to see
0:21:54.316 –> 0:21:57.136 which is best for patients who are
0:21:57.136 –> 0:21:59.708 not candidates for a clinical trial
0:21:59.708 –> 0:22:02.613 where there still may be
0:22:02.613 –> 0:22:05.422 questions about what is best practice.
0:22:05.422 –> 0:22:08.38 How do you reassure patients and parents
0:22:08.468 –> 0:22:11.359 that this really is
0:22:11.36 –> 0:22:13.5 the way to go?
0:22:14.33 –> 0:22:16.82 Are there still collaborations where you
0:22:16.82 –> 0:22:19.916 get together with a consensus,
0:22:19.92 –> 0:22:21.604 either nationally or internationally,
0:22:21.604 –> 0:22:24.628 to figure out what might be best
0:22:24.628 –> 0:22:26.34 practice for these patients?
0:22:26.77 –> 0:22:29.584 Absolutely. I think one thing
0:22:29.584 –> 0:22:32.641 is that the best practice is obviously
0:22:32.641 –> 0:22:35.86 the standard of care in many cases.

0:22:35.86 –> 0:22:38.242 But in many cases there is
0:22:38.242 –> 0:22:40.33 no proper standard of care,
0:22:40.33 –> 0:22:43.501 but the beauty again of having these
0:22:43.501 –> 0:22:45.56 close collaborations working together
0:22:45.56 –> 0:22:48.15 on trials means that we have a
0:22:48.15 –> 0:22:50.099 really great phenomenal community of
0:22:50.099 –> 0:22:52.78 oncologists that you can call upon to
0:22:52.78 –> 0:22:54.988 discuss and get guidance on in
0:22:54.988 –> 0:22:56.96 really rare cases.
0:22:56.96 –> 0:22:59.73 So I think that is a really
0:22:59.81 –> 0:23:02.69 fulfilling part of being able to
0:23:02.69 –> 0:23:05.052 connect with friends and colleagues across
0:23:05.052 –> 0:23:07.621 the country, across the world to be
0:23:07.621 –> 0:23:09.88 able to discuss some difficult cases.
0:23:09.88 –> 0:23:12.88 What is really fun is
0:23:12.88 –> 0:23:15.66 we've now developed these virtual
0:23:15.66 –> 0:23:16.707 International tumor boards
0:23:16.707 –> 0:23:19.15 for some of these really rare cancers,
0:23:19.15 –> 0:23:21.243 so we have an international tumor board
0:23:21.243 –> 0:23:22.99 for patients with hepatoblastoma,
0:23:22.99 –> 0:23:24.845 where experts from across the
0:23:24.845 –> 0:23:27.301 country meet once a month and you
0:23:27.301 –> 0:23:29.405 can put in a case and they will
0:23:29.479 –> 0:23:31.709 review everything and discuss it,
0:23:31.71 –> 0:23:34.86 just like we do at a local tumor board.
0:23:34.86 –> 0:23:35.187 Similarly,
0:23:35.187 –> 0:23:37.476 we have a rare tumor board
0:23:37.476 –> 0:23:39.389 which is across the country,
0:23:39.39 –> 0:23:40.11 so again,
0:23:40.11 –> 0:23:43.461 people do go above and beyond to try and
0:23:43.461 –> 0:23:46.525 put in their time and effort to bring their

0:23:46.53 –> 0:23:48.72 thoughts and their experience to help
0:23:48.72 –> 0:23:50.839 kids across the country and across
0:23:50.84 –> 0:23:53.79 the world.
0:23:53.869 –> 0:23:56.575 I love the fact that there is such humility
0:23:56.58 –> 0:23:59.022 among pediatric oncologists to
0:23:59.022 –> 0:24:01.609 really collaborate with each other and to
0:24:01.609 –> 0:24:04.12 figure out what's the best for this child.
0:24:04.12 –> 0:24:06.85 Which is so important and so
0:24:06.85 –> 0:24:09.45 heartening for parents going through this.
0:24:09.45 –> 0:24:12.114 Now I did promise that we'd
0:24:12.114 –> 0:24:14.783 spend at least a few minutes
0:24:14.783 –> 0:24:17.178 talking about your other passion,
0:24:17.18 –> 0:24:19.586 which is sickle cell disease and
0:24:19.586 –> 0:24:22.069 sickle cell disease is still rare,
0:24:22.07 –> 0:24:23.698 but presumably less rare
0:24:23.698 –> 0:24:24.919 than pediatric cancers.
0:24:24.92 –> 0:24:27.44 Is that right?
0:24:27.44 –> 0:24:30.84 I think it is rarer than pediatric cancers,
0:24:30.84 –> 0:24:33.416 and in the US now with
0:24:33.416 –> 0:24:35.959 also a changing demographic,
0:24:35.96 –> 0:24:38.655 we have patients of many
0:24:38.655 –> 0:24:40.811 different ethnicities who can
0:24:40.811 –> 0:24:44.009 also have sickle cell disease so
0:24:44.01 –> 0:24:47.405 it's definitely something that we
0:24:47.41 –> 0:24:50.874 in Connecticut see 24 to 26 new
0:24:50.874 –> 0:24:53.387 diagnoses of sickle cell disease
0:24:53.387 –> 0:24:56.999 each year and about 600 new patients
0:24:57.098 –> 0:25:00.05 with sickle cell trait per year.
0:25:07.21 –> 0:25:09.554 Talk a little
0:25:09.554 –> 0:25:11.998 bit about sickle cell disease and
0:25:11.998 –> 0:25:14.429 the problems that people can run into.

0:25:14.43 –> 0:25:16.719 I mean, when people think about cancer,

0:25:16.72 –> 0:25:19.107 you really don't need to say anything

0:25:19.107 –> 0:25:21.639 more than cancer for it to strike

0:25:21.639 –> 0:25:23.94 the fear of God into some people.

0:25:23.94 –> 0:25:26.19 But what problems do people with

0:25:26.19 –> 0:25:28.442 sickle cell disease run into that

0:25:28.442 –> 0:25:30.488 are problematic and talk a

0:25:30.488 –> 0:25:32.886 little bit about some of the new

0:25:32.886 –> 0:25:34.526 therapies that are out now?

0:25:37.17 –> 0:25:39.81 So sickle cell disease

0:25:39.81 –> 0:25:42.01 interestingly, is the first single

0:25:42.01 –> 0:25:44.21 gene disorder that was described

0:25:44.21 –> 0:25:48.17 over 120 years ago.

0:25:49.334 –> 0:25:52.05 It is a lifelong chronic disease that

0:25:52.127 –> 0:25:54.863 obviously you inherit from your parents

0:25:54.863 –> 0:25:58.289 and the hallmarks of sickle cell disease

0:25:58.29 –> 0:26:01.81 are these painful crises,

0:26:01.81 –> 0:26:04.065 which really mean that patients

0:26:04.065 –> 0:26:05.869 with sickle cell disease

0:26:05.87 –> 0:26:09.134 can come into the hospital or have pain

0:26:09.134 –> 0:26:12.56 at home several times a year.

0:26:12.56 –> 0:26:15.038 These chronic VS occlusive crises can

0:26:15.038 –> 0:26:17.75 also lead to multiple complications,

0:26:17.75 –> 0:26:20.576 including stroke

0:26:20.58 –> 0:26:23.884 and acute chest syndrome.

0:26:28.81 –> 0:26:32.43 You can also have a lot of long term chronic

0:26:32.514 –> 0:26:35.556 morbidity because of this ongoing

0:26:35.56 –> 0:26:37.248 microvascular occlusion that happens in

0:26:37.248 –> 0:26:38.936 all your organ systems.

0:26:38.94 –> 0:26:41.649 So patients with sickle cell disease can

0:26:41.649 –> 0:26:44.848 have long term problems with their kidneys,

0:26:44.85 –> 0:26:46.454 leading to sickle nephropathy.
0:26:46.454 –> 0:26:48.86 They can have problems with their
0:26:48.924 –> 0:26:51.179 liver leading to sickle hepatopathy.
0:26:51.18 –> 0:26:53.29 They can have sickle retinopathy,
0:26:53.29 –> 0:26:55.996 so it's a disease which has
0:26:55.996 –> 0:26:57.8 acute complications which brings
0:26:57.876 –> 0:26:59.68 someone to the hospital.
0:26:59.68 –> 0:27:02.865 But also has ongoing long term chronic
0:27:02.865 –> 0:27:05.672 disease burden which continues to affect
0:27:05.672 –> 0:27:09.32 pretty much every organ system in their body.
0:27:09.32 –> 0:27:13.543 So it is a disease
0:27:13.543 –> 0:27:17.575 where you have to pay attention to
0:27:17.58 –> 0:27:20.34 obviously the acute management during pain,
0:27:20.34 –> 0:27:21.256 crisis, stroke,
0:27:21.256 –> 0:27:23.015 acute chest syndrome, etc.
0:27:23.015 –> 0:27:26.48 but you also have to take care of these
0:27:26.571 –> 0:27:30.249 adults and children for preventative care.
0:27:30.25 –> 0:27:32.861 To make sure that you are monitoring
0:27:32.861 –> 0:27:35.62 for these long term complications and
0:27:35.62 –> 0:27:38.225 you are intervening when feasible.
0:27:38.622 –> 0:27:41.758 But the good part about sickle
0:27:41.758 –> 0:27:44.619 cell disease or the exciting part
0:27:44.619 –> 0:27:48.141 currently is that we have a lot of new
0:27:48.141 –> 0:27:50.382 therapies which have come about in
0:27:50.382 –> 0:27:53.518 order to improve not only the pain crises,
0:27:54.489 –> 0:27:56.427 the FDA has now approved several
0:27:56.427 –> 0:27:58.61 new drugs besides hydroxyurea,
0:27:58.61 –> 0:28:00.969 which was the only drug available for
0:28:00.969 –> 0:28:03.709 a long time to
0:28:03.71 –> 0:28:06.314 modify sickle cell disease and the
0:28:06.314 –> 0:28:08.62 most exciting thing really is the

0:28:08.62 –> 0:28:10.36 advent of bone marrow transplant,
0:28:10.36 –> 0:28:12.622 which is currently the only curative
0:28:12.622 –> 0:28:14.834 option for sickle cell disease but
0:28:14.834 –> 0:28:17.074 also gene therapy and many of you
0:28:17.074 –> 0:28:19.406 might have seen data on gene therapy,
0:28:20.349 –> 0:28:22.54 some case reports of gene therapy for
0:28:22.606 –> 0:28:24.712 sickle cell disease which is exciting
0:28:24.712 –> 0:28:27.285 and we are looking forward to that
0:28:27.285 –> 0:28:29.499 becoming more streamlined in the next
0:28:29.5 –> 0:28:31.366 few years.
0:28:31.366 –> 0:28:33.416 Dr. Pashankar is an associate professor of
0:28:33.416 –> 0:28:34.912 Pediatrics in hematology oncology
0:28:34.912 –> 0:28:37.159 at the Yale School of Medicine.
0:28:37.16 –> 0:28:38.692 If you have questions
0:28:38.692 –> 0:28:40.224 the address is canceranswers@yale.edu
0:28:40.224 –> 0:28:42.342 and past editions of the program
0:28:42.342 –> 0:28:44.274 are available in audio and written
0:28:44.337 –> 0:28:45.948 form at yalecancercenter.org.
0:28:45.95 –> 0:28:48.422 We hope you'll join us next week to
0:28:48.422 –> 0:28:50.8 learn more about the fight against
0:28:50.8 –> 0:28:52.915 cancer here on Connecticut Public
0:28:52.915 –> 0:28:55.02 radio. Funding for Yale Cancer
0:28:55.02 –> 0:28:57.035 Answers is provided by Smilow
0:28:57.035 –> 0:29:00.072 Cancer Hospital and AstraZeneca.