

WEBVTT

NOTE duration:"00:58:46.8050000"

NOTE language:en-us

NOTE Confidence: 0.701370894908905

00:00:00.000 --> 00:00:02.508 Fortnight yeah we can see out

NOTE Confidence: 0.701370894908905

00:00:02.510 --> 00:00:04.540 the window behind you looks

NOTE Confidence: 0.847600843225207

00:00:04.540 --> 00:00:08.187 nice. So why don't we get started?

NOTE Confidence: 0.847600843225207

00:00:08.190 --> 00:00:11.246 And I know there's still people joining us,

NOTE Confidence: 0.847600843225207

00:00:11.250 --> 00:00:13.536 so to all those in attendance,

NOTE Confidence: 0.847600843225207

00:00:13.540 --> 00:00:16.186 since those logging in welcome to a

NOTE Confidence: 0.847600843225207

00:00:16.186 --> 00:00:18.129 special Cancer Center grand rounds

NOTE Confidence: 0.847600843225207

00:00:18.129 --> 00:00:20.355 where you know very privileged to

NOTE Confidence: 0.847600843225207

00:00:20.355 --> 00:00:23.087 honor the legacy of Doctor John Murnan,

NOTE Confidence: 0.847600843225207

00:00:23.090 --> 00:00:25.393 have a very special guest as our

NOTE Confidence: 0.847600843225207

00:00:25.393 --> 00:00:27.669 2000 two 1020 Memorial Lecture,

NOTE Confidence: 0.847600843225207

00:00:27.670 --> 00:00:30.078 and I want to introduce where I

NOTE Confidence: 0.847600843225207

00:00:30.078 --> 00:00:31.966 herbs whose everyone knows is

NOTE Confidence: 0.847600843225207

00:00:31.966 --> 00:00:34.312 our chief of Medical Oncology and

NOTE Confidence: 0.847600843225207

00:00:34.312 --> 00:00:35.973 Associate Cancer Center director

NOTE Confidence: 0.847600843225207

00:00:35.973 --> 00:00:38.409 for a translation of science and.

NOTE Confidence: 0.847600843225207

00:00:38.410 --> 00:00:39.858 Leader of our lungs.

NOTE Confidence: 0.847600843225207

00:00:39.858 --> 00:00:41.297 For, among other things,

NOTE Confidence: 0.847600843225207

00:00:41.297 --> 00:00:43.092 to speak about the lectureship

NOTE Confidence: 0.847600843225207

00:00:43.092 --> 00:00:44.549 and introduce our speaker.

NOTE Confidence: 0.847600843225207

00:00:44.550 --> 00:00:45.918 So Roy, thank you,

NOTE Confidence: 0.847600843225207

00:00:45.918 --> 00:00:47.286 thanks Charlie and thanks

NOTE Confidence: 0.847600843225207

00:00:47.286 --> 00:00:48.520 everyone for joining.

NOTE Confidence: 0.847600843225207

00:00:48.520 --> 00:00:51.416 This is a very special lecture because it

NOTE Confidence: 0.847600843225207

00:00:51.416 --> 00:00:54.448 honors our colleague and friend John Urine.

NOTE Confidence: 0.847600843225207

00:00:54.450 --> 00:00:56.074 If we can go to the next slide,

NOTE Confidence: 0.847600843225207

00:00:56.080 --> 00:00:56.290 please.

NOTE Confidence: 0.860820174217224

00:00:59.160 --> 00:01:04.898 Emily. So many people who are on the line,

NOTE Confidence: 0.860820174217224

00:01:04.900 --> 00:01:06.867 new John I see John Sister Mary

NOTE Confidence: 0.860820174217224

00:01:06.867 --> 00:01:09.598 Kay is on and his wife Nancy and  
NOTE Confidence: 0.860820174217224

00:01:09.598 --> 00:01:11.413 perhaps others are the family.  
NOTE Confidence: 0.860820174217224

00:01:11.420 --> 00:01:13.292 One of the special things about  
NOTE Confidence: 0.860820174217224

00:01:13.292 --> 00:01:15.608 this lecture is we usually can get  
NOTE Confidence: 0.860820174217224

00:01:15.608 --> 00:01:17.606 together and talk and in person.  
NOTE Confidence: 0.860820174217224

00:01:17.610 --> 00:01:19.885 Hopefully that will happen again next year.  
NOTE Confidence: 0.860820174217224

00:01:19.890 --> 00:01:22.530 But no, John was a very special person  
NOTE Confidence: 0.860820174217224

00:01:22.530 --> 00:01:25.675 and as many of us know he passed away in  
NOTE Confidence: 0.860820174217224

00:01:25.675 --> 00:01:28.696 2005 of Melanoma at the young age of 47.  
NOTE Confidence: 0.860820174217224

00:01:28.700 --> 00:01:30.315 He was an associate professor  
NOTE Confidence: 0.860820174217224

00:01:30.315 --> 00:01:32.320 of medicine at the at Yale.  
NOTE Confidence: 0.860820174217224

00:01:32.320 --> 00:01:34.238 He was the director of the outpatient  
NOTE Confidence: 0.860820174217224

00:01:34.238 --> 00:01:36.237 center director of the Lung Cancer Clinic.  
NOTE Confidence: 0.860820174217224

00:01:36.240 --> 00:01:38.200 I wouldn't probably be here at Yelp,  
NOTE Confidence: 0.860820174217224

00:01:38.200 --> 00:01:39.600 not for John and Co.  
NOTE Confidence: 0.860820174217224

00:01:39.600 --> 00:01:41.395 Leader of the Experimental Therapeutics

NOTE Confidence: 0.860820174217224  
00:01:41.395 --> 00:01:43.630 program at the Yale Cancer Center.  
NOTE Confidence: 0.860820174217224  
00:01:43.630 --> 00:01:46.430 He was survived by his wife Nancy,  
NOTE Confidence: 0.860820174217224  
00:01:46.430 --> 00:01:47.606 his son John,  
NOTE Confidence: 0.860820174217224  
00:01:47.606 --> 00:01:50.350 his mother Jean and I know that  
NOTE Confidence: 0.860820174217224  
00:01:50.440 --> 00:01:53.226 Nancy is here and maybe Gene no.  
NOTE Confidence: 0.860820174217224  
00:01:53.230 --> 00:01:56.430 Many new new John even better than me.  
NOTE Confidence: 0.860820174217224  
00:01:56.430 --> 00:01:58.985 I knew him from from the clinical  
NOTE Confidence: 0.860820174217224  
00:01:58.985 --> 00:02:00.830 trials and from meetings.  
NOTE Confidence: 0.860820174217224  
00:02:00.830 --> 00:02:02.830 He was really the consummate  
NOTE Confidence: 0.860820174217224  
00:02:02.830 --> 00:02:03.630 medical oncologist.  
NOTE Confidence: 0.860820174217224  
00:02:03.630 --> 00:02:06.430 Academically, he was just the most caring,  
NOTE Confidence: 0.860820174217224  
00:02:06.430 --> 00:02:08.030 position and active laboratory  
NOTE Confidence: 0.860820174217224  
00:02:08.030 --> 00:02:10.030 working to develop new treatments.  
NOTE Confidence: 0.860820174217224  
00:02:10.030 --> 00:02:12.055 Very insightful and really the  
NOTE Confidence: 0.860820174217224  
00:02:12.055 --> 00:02:14.600 top program that we have today.  
NOTE Confidence: 0.860820174217224

00:02:14.600 --> 00:02:17.950 Is in large part due to John in his effort.  
NOTE Confidence: 0.860820174217224

00:02:17.950 --> 00:02:19.966 He had some efforts to his family  
NOTE Confidence: 0.860820174217224

00:02:19.966 --> 00:02:22.828 with in Las Vegas and Yell had some  
NOTE Confidence: 0.860820174217224

00:02:22.828 --> 00:02:24.368 interactions there for awhile,  
NOTE Confidence: 0.860820174217224

00:02:24.370 --> 00:02:26.519 but really he just was someone that  
NOTE Confidence: 0.860820174217224

00:02:26.519 --> 00:02:29.275 we all knew and loved and one of  
NOTE Confidence: 0.860820174217224

00:02:29.275 --> 00:02:31.040 the reasons we've invited today's  
NOTE Confidence: 0.860820174217224

00:02:31.108 --> 00:02:33.828 speaker is not only is she an amazing  
NOTE Confidence: 0.860820174217224

00:02:33.828 --> 00:02:35.566 researcher and clinician lung cancer,  
NOTE Confidence: 0.860820174217224

00:02:35.566 --> 00:02:38.412 but she knew him as well through the  
NOTE Confidence: 0.860820174217224

00:02:38.412 --> 00:02:40.596 cogs where John was a major person.  
NOTE Confidence: 0.860820174217224

00:02:40.600 --> 00:02:43.296 So really very glad to have this lecture.  
NOTE Confidence: 0.860820174217224

00:02:43.300 --> 00:02:45.610 I gave this lecture 11 years ago  
NOTE Confidence: 0.860820174217224

00:02:45.610 --> 00:02:48.075 so it's really a pleasure to  
NOTE Confidence: 0.860820174217224

00:02:48.075 --> 00:02:49.479 introduce today's speaker.  
NOTE Confidence: 0.860820174217224

00:02:49.480 --> 00:02:51.331 We can go to the next slide, please.

NOTE Confidence: 0.860820174217224  
00:02:51.331 --> 00:02:53.736 So in thinking about this,  
NOTE Confidence: 0.860820174217224  
00:02:53.740 --> 00:02:56.141 you know this is the second time  
NOTE Confidence: 0.860820174217224  
00:02:56.141 --> 00:02:57.873 we've scheduled this with Heather  
NOTE Confidence: 0.860820174217224  
00:02:57.873 --> 00:03:00.409 and we just decided we would do this  
NOTE Confidence: 0.860820174217224  
00:03:00.478 --> 00:03:02.935 virtually because we were so lucky to.  
NOTE Confidence: 0.860820174217224  
00:03:02.940 --> 00:03:05.668 Heather agreed to come and speak with us.  
NOTE Confidence: 0.860820174217224  
00:03:05.670 --> 00:03:07.536 Doctor Heather Wakelee is a professor  
NOTE Confidence: 0.860820174217224  
00:03:07.536 --> 00:03:09.893 of medicine and the interim chief in  
NOTE Confidence: 0.860820174217224  
00:03:09.893 --> 00:03:11.993 the Division of Oncology at Stanford  
NOTE Confidence: 0.860820174217224  
00:03:11.993 --> 00:03:13.799 University and the President elect  
NOTE Confidence: 0.860820174217224  
00:03:13.799 --> 00:03:15.199 of the International Association  
NOTE Confidence: 0.860820174217224  
00:03:15.199 --> 00:03:17.408 for the Study of Lung Cancer.  
NOTE Confidence: 0.860820174217224  
00:03:17.408 --> 00:03:19.670 PS When she received her medical  
NOTE Confidence: 0.860820174217224  
00:03:19.747 --> 00:03:22.472 degree from Johns Hopkins University  
NOTE Confidence: 0.860820174217224  
00:03:22.472 --> 00:03:24.652 and completed offer postgraduate  
NOTE Confidence: 0.860820174217224

00:03:24.652 --> 00:03:26.623 training at Stanford University  
NOTE Confidence: 0.860820174217224

00:03:26.623 --> 00:03:29.323 before joining the faculty in 2003.  
NOTE Confidence: 0.860820174217224

00:03:29.330 --> 00:03:30.970 Heather specializes in the  
NOTE Confidence: 0.860820174217224

00:03:30.970 --> 00:03:32.610 treatment of lung cancer,  
NOTE Confidence: 0.860820174217224

00:03:32.610 --> 00:03:33.864 thymoma and mesothelioma,  
NOTE Confidence: 0.860820174217224

00:03:33.864 --> 00:03:35.954 and had developed research programs  
NOTE Confidence: 0.860820174217224

00:03:35.954 --> 00:03:38.830 related to lung cancer in SOMA across  
NOTE Confidence: 0.860820174217224

00:03:38.830 --> 00:03:40.805 multiple areas including clinical trials,  
NOTE Confidence: 0.860820174217224

00:03:40.810 --> 00:03:42.638 translation, working, population Sciences.  
NOTE Confidence: 0.860820174217224

00:03:42.638 --> 00:03:44.466 He's the principal investigator.  
NOTE Confidence: 0.860820174217224

00:03:44.470 --> 00:03:45.934 Numerous clinical trials that  
NOTE Confidence: 0.860820174217224

00:03:45.934 --> 00:03:48.130 have changed the pattern of care,  
NOTE Confidence: 0.860820174217224

00:03:48.130 --> 00:03:50.517 and as a faculty director of the  
NOTE Confidence: 0.860820174217224

00:03:50.517 --> 00:03:52.390 Stanford Cancer Clinical Trials Office  
NOTE Confidence: 0.860820174217224

00:03:52.390 --> 00:03:54.355 and lead investigator for Ikago,  
NOTE Confidence: 0.860820174217224

00:03:54.360 --> 00:03:57.168 Akron Clinical Trials Group at Stanford.

NOTE Confidence: 0.860820174217224  
00:03:57.170 --> 00:03:59.305 He also is active in many organizations,  
NOTE Confidence: 0.860820174217224  
00:03:59.310 --> 00:04:00.835 but actually I've shared many  
NOTE Confidence: 0.860820174217224  
00:04:00.835 --> 00:04:01.750 patients with her.  
NOTE Confidence: 0.860820174217224  
00:04:01.750 --> 00:04:03.405 She's also the most compassionate  
NOTE Confidence: 0.860820174217224  
00:04:03.405 --> 00:04:05.060 physician and the person that  
NOTE Confidence: 0.842521250247955  
00:04:05.119 --> 00:04:06.464 I would call whenever I  
NOTE Confidence: 0.842521250247955  
00:04:06.464 --> 00:04:07.540 have a difficult case,  
NOTE Confidence: 0.842521250247955  
00:04:07.540 --> 00:04:09.370 especially in the go far field.  
NOTE Confidence: 0.842521250247955  
00:04:09.370 --> 00:04:11.505 In fact, I did that last night,  
NOTE Confidence: 0.842521250247955  
00:04:11.510 --> 00:04:13.931 so if you go to the next slide we  
NOTE Confidence: 0.842521250247955  
00:04:13.931 --> 00:04:15.936 normally at this point I would  
NOTE Confidence: 0.842521250247955  
00:04:15.936 --> 00:04:17.601 be handing Heather her plaque,  
NOTE Confidence: 0.842521250247955  
00:04:17.610 --> 00:04:19.440 but due to the amazing efficiency  
NOTE Confidence: 0.842521250247955  
00:04:19.440 --> 00:04:20.660 of Yale Cancer Center,  
NOTE Confidence: 0.842521250247955  
00:04:20.660 --> 00:04:23.128 Heather hasn't show us.  
NOTE Confidence: 0.842521250247955



00:04:23.130 --> 00:04:25.050 And so it already arrived.  
NOTE Confidence: 0.830419361591339

00:04:25.560 --> 00:04:27.989 Can you see it? So here we  
NOTE Confidence: 0.830419361591339

00:04:27.990 --> 00:04:30.230 go and then last night we actually  
NOTE Confidence: 0.830419361591339

00:04:30.230 --> 00:04:32.149 had a little get together.  
NOTE Confidence: 0.830419361591339

00:04:32.150 --> 00:04:34.320 Some of us on zoom and you  
NOTE Confidence: 0.830419361591339

00:04:34.320 --> 00:04:36.319 can see Pam Kuntz there.  
NOTE Confidence: 0.830419361591339

00:04:36.320 --> 00:04:38.518 Who we recruited out of Heathers Group  
NOTE Confidence: 0.830419361591339

00:04:38.518 --> 00:04:41.194 and we did a little zoom happy hour  
NOTE Confidence: 0.830419361591339

00:04:41.194 --> 00:04:43.324 and without drinks but just talked  
NOTE Confidence: 0.830419361591339

00:04:43.324 --> 00:04:45.688 about John talked about lung cancer.  
NOTE Confidence: 0.830419361591339

00:04:45.690 --> 00:04:47.420 So Heather it's wonderful to  
NOTE Confidence: 0.830419361591339

00:04:47.420 --> 00:04:48.804 have you here today.  
NOTE Confidence: 0.830419361591339

00:04:48.810 --> 00:04:50.230 Thank you to them.  
NOTE Confidence: 0.830419361591339

00:04:50.230 --> 00:04:52.360 You're in family for your support  
NOTE Confidence: 0.830419361591339

00:04:52.434 --> 00:04:54.534 and again and we Miss John so  
NOTE Confidence: 0.830419361591339

00:04:54.534 --> 00:04:56.810 much but we're looking forward to.

NOTE Confidence: 0.830419361591339  
00:04:56.810 --> 00:04:58.635 His memory to a wonderful  
NOTE Confidence: 0.830419361591339  
00:04:58.635 --> 00:05:00.095 lecture from Heather Wakelee,  
NOTE Confidence: 0.830419361591339  
00:05:00.100 --> 00:05:02.296 15 years of advances in EGFR  
NOTE Confidence: 0.830419361591339  
00:05:02.296 --> 00:05:03.765 mutant lung cancer, Heather,  
NOTE Confidence: 0.830419361591339  
00:05:03.765 --> 00:05:04.860 welcome to Yell.  
NOTE Confidence: 0.858495354652405  
00:05:06.130 --> 00:05:07.810 Thank you, thanks right for  
NOTE Confidence: 0.858495354652405  
00:05:07.810 --> 00:05:09.490 that very kind introduction for  
NOTE Confidence: 0.858495354652405  
00:05:09.548 --> 00:05:11.198 inviting me to be here today.  
NOTE Confidence: 0.858495354652405  
00:05:11.200 --> 00:05:13.293 I really wish I could be there  
NOTE Confidence: 0.858495354652405  
00:05:13.293 --> 00:05:15.573 in person to get to visit with  
NOTE Confidence: 0.858495354652405  
00:05:15.573 --> 00:05:17.535 all of you toward the campus,  
NOTE Confidence: 0.858495354652405  
00:05:17.540 --> 00:05:20.076 which I haven't seen in a few years.  
NOTE Confidence: 0.858495354652405  
00:05:20.080 --> 00:05:22.753 I know there's been a lot of lot of  
NOTE Confidence: 0.858495354652405  
00:05:22.753 --> 00:05:24.701 development an I really would have  
NOTE Confidence: 0.858495354652405  
00:05:24.701 --> 00:05:27.049 valued getting to meet with the family.  
NOTE Confidence: 0.858495354652405

00:05:27.050 --> 00:05:29.269 As Roy mentioned, I did know John,  
NOTE Confidence: 0.858495354652405

00:05:29.270 --> 00:05:31.489 I was pretty early in my career,  
NOTE Confidence: 0.858495354652405

00:05:31.490 --> 00:05:33.485 but he was very welcoming when I  
NOTE Confidence: 0.858495354652405

00:05:33.485 --> 00:05:35.928 showed up at the Kage Akron meanings.  
NOTE Confidence: 0.858495354652405

00:05:35.930 --> 00:05:37.242 I remember having several  
NOTE Confidence: 0.858495354652405

00:05:37.242 --> 00:05:38.226 conversations with him.  
NOTE Confidence: 0.858495354652405

00:05:38.230 --> 00:05:40.378 And I very vividly remember when  
NOTE Confidence: 0.858495354652405

00:05:40.378 --> 00:05:43.089 I heard of his death and how  
NOTE Confidence: 0.858495354652405

00:05:43.089 --> 00:05:45.089 devastating that was for me.  
NOTE Confidence: 0.858495354652405

00:05:45.090 --> 00:05:46.990 For whole lung cancer community.  
NOTE Confidence: 0.858495354652405

00:05:46.990 --> 00:05:49.489 And so when Roy invited me to  
NOTE Confidence: 0.858495354652405

00:05:49.489 --> 00:05:52.239 give this talk and I was thinking  
NOTE Confidence: 0.858495354652405

00:05:52.239 --> 00:05:54.224 about what could I cover,  
NOTE Confidence: 0.858495354652405

00:05:54.230 --> 00:05:56.694 thought about the fact that we lost  
NOTE Confidence: 0.858495354652405

00:05:56.694 --> 00:05:59.208 John 15 years ago and thought about  
NOTE Confidence: 0.858495354652405

00:05:59.208 --> 00:06:01.806 how much the world of lung cancer

NOTE Confidence: 0.858495354652405

00:06:01.806 --> 00:06:04.518 therapy has changed during that time.

NOTE Confidence: 0.858495354652405

00:06:04.520 --> 00:06:06.872 Ann wanted to use the story

NOTE Confidence: 0.858495354652405

00:06:06.872 --> 00:06:08.760 with EGFR lung cancer is.

NOTE Confidence: 0.858495354652405

00:06:08.760 --> 00:06:10.808 As a real example of one of the

NOTE Confidence: 0.858495354652405

00:06:10.808 --> 00:06:12.471 most dramatic changes that have

NOTE Confidence: 0.858495354652405

00:06:12.471 --> 00:06:14.286 happened during that time period.

NOTE Confidence: 0.858495354652405

00:06:14.290 --> 00:06:16.537 But I also wanted to weave in

NOTE Confidence: 0.858495354652405

00:06:16.537 --> 00:06:18.967 a different story and that was

NOTE Confidence: 0.858495354652405

00:06:18.967 --> 00:06:20.365 about patient communication,

NOTE Confidence: 0.858495354652405

00:06:20.370 --> 00:06:22.986 and so I'm also going to be talking

NOTE Confidence: 0.858495354652405

00:06:22.986 --> 00:06:25.714 about that and framing it a little

NOTE Confidence: 0.858495354652405

00:06:25.714 --> 00:06:27.709 bit around another physician who

NOTE Confidence: 0.858495354652405

00:06:27.780 --> 00:06:30.174 unfortunately lost to cancer and who

NOTE Confidence: 0.858495354652405

00:06:30.174 --> 00:06:32.868 has a connection to yell as well.

NOTE Confidence: 0.858495354652405

00:06:32.868 --> 00:06:35.064 And that's Paul Community and his

NOTE Confidence: 0.858495354652405

00:06:35.064 --> 00:06:37.467 breath when breath becomes air book,  
NOTE Confidence: 0.858495354652405

00:06:37.470 --> 00:06:39.750 I was I was his physician,  
NOTE Confidence: 0.858495354652405

00:06:39.750 --> 00:06:42.756 and in that book he talked a lot about  
NOTE Confidence: 0.858495354652405

00:06:42.756 --> 00:06:45.477 his philosophy about living as a.  
NOTE Confidence: 0.858495354652405

00:06:45.480 --> 00:06:46.744 Well, first of all,  
NOTE Confidence: 0.858495354652405

00:06:46.744 --> 00:06:48.640 is being a care provider physician  
NOTE Confidence: 0.858495354652405

00:06:48.708 --> 00:06:50.613 for patients facing cancer and  
NOTE Confidence: 0.858495354652405

00:06:50.613 --> 00:06:51.756 other serious issues.  
NOTE Confidence: 0.858495354652405

00:06:51.760 --> 00:06:54.464 But then as a patient and how he  
NOTE Confidence: 0.858495354652405

00:06:54.464 --> 00:06:56.607 thought about living as a patient  
NOTE Confidence: 0.858495354652405

00:06:56.607 --> 00:06:59.106 an he really captured a lot of  
NOTE Confidence: 0.858495354652405

00:06:59.106 --> 00:07:01.188 the ways I think about things.  
NOTE Confidence: 0.858495354652405

00:07:01.190 --> 00:07:03.535 And as we talked together and so  
NOTE Confidence: 0.858495354652405

00:07:03.535 --> 00:07:06.069 I wanted to share that as well.  
NOTE Confidence: 0.858495354652405

00:07:06.070 --> 00:07:09.910 So I'm going to try to do over the next hour.  
NOTE Confidence: 0.858495354652405

00:07:09.910 --> 00:07:13.222 I'm going to go ahead and share my

NOTE Confidence: 0.858495354652405  
00:07:13.222 --> 00:07:18.230 screen here. And give you the talk.  
NOTE Confidence: 0.858495354652405  
00:07:18.230 --> 00:07:19.930 OK, and.  
NOTE Confidence: 0.858495354652405  
00:07:19.930 --> 00:07:22.480 View slideshow OK,  
NOTE Confidence: 0.858495354652405  
00:07:22.480 --> 00:07:24.300 so hopefully you're seeing this  
NOTE Confidence: 0.858495354652405  
00:07:24.300 --> 00:07:27.203 now show I titled this 15 years of  
NOTE Confidence: 0.858495354652405  
00:07:27.203 --> 00:07:29.225 advances in EGFR mutant non small  
NOTE Confidence: 0.858495354652405  
00:07:29.225 --> 00:07:31.657 cell lung cancer lung cancer and then  
NOTE Confidence: 0.858495354652405  
00:07:31.657 --> 00:07:34.132 with the focus on patient communication,  
NOTE Confidence: 0.858495354652405  
00:07:34.132 --> 00:07:36.376 these are my disclosures.  
NOTE Confidence: 0.858495354652405  
00:07:36.380 --> 00:07:38.366 And then as I thought about  
NOTE Confidence: 0.858495354652405  
00:07:38.366 --> 00:07:39.359 a learning objectives,  
NOTE Confidence: 0.858495354652405  
00:07:39.360 --> 00:07:41.696 it was to really talk about how that  
NOTE Confidence: 0.858495354652405  
00:07:41.696 --> 00:07:43.659 EGFR Field has evolved overtime,  
NOTE Confidence: 0.858495354652405  
00:07:43.660 --> 00:07:44.984 specifically the EGFR Tkis,  
NOTE Confidence: 0.858495354652405  
00:07:44.984 --> 00:07:46.970 and then a couple of things.  
NOTE Confidence: 0.858495354652405

00:07:46.970 --> 00:07:49.301 We're looking at adding to Egypt art  
NOTE Confidence: 0.858495354652405

00:07:49.301 --> 00:07:51.939 therapy and then talk about communication.  
NOTE Confidence: 0.858495354652405

00:07:51.940 --> 00:07:54.532 So when we think about advances  
NOTE Confidence: 0.858495354652405

00:07:54.532 --> 00:07:56.261 in the treatment, EGFR,  
NOTE Confidence: 0.858495354652405

00:07:56.261 --> 00:07:58.847 TKI eyes alone, veg F combinations,  
NOTE Confidence: 0.858495354652405

00:07:58.850 --> 00:08:00.578 each diff are combinations,  
NOTE Confidence: 0.858495354652405

00:08:00.578 --> 00:08:02.050 chemotherapy, immune therapy,  
NOTE Confidence: 0.858495354652405

00:08:02.050 --> 00:08:04.130 and then the communication.  
NOTE Confidence: 0.858495354652405

00:08:04.130 --> 00:08:06.570 So back in 2000 and I was just  
NOTE Confidence: 0.858495354652405

00:08:06.570 --> 00:08:08.778 starting my time as a oncologist.  
NOTE Confidence: 0.858495354652405

00:08:08.780 --> 00:08:11.610 This was the state of the art and what this  
NOTE Confidence: 0.886035919189453

00:08:11.682 --> 00:08:14.265 is showing is survival curve from a  
NOTE Confidence: 0.886035919189453

00:08:14.265 --> 00:08:16.100 trial where patients were treated  
NOTE Confidence: 0.886035919189453

00:08:16.100 --> 00:08:18.732 with only things we knew to use which  
NOTE Confidence: 0.886035919189453

00:08:18.740 --> 00:08:20.116 was just chemotherapy combinations  
NOTE Confidence: 0.886035919189453

00:08:20.116 --> 00:08:22.548 and you can see that we hadn't

NOTE Confidence: 0.886035919189453  
00:08:22.548 --> 00:08:24.378 made a whole lot of progress.  
NOTE Confidence: 0.886035919189453  
00:08:24.380 --> 00:08:25.708 We were helping people,  
NOTE Confidence: 0.886035919189453  
00:08:25.708 --> 00:08:27.700 but not for nearly long enough,  
NOTE Confidence: 0.886035919189453  
00:08:27.700 --> 00:08:29.608 and without really being able to  
NOTE Confidence: 0.886035919189453  
00:08:29.608 --> 00:08:31.286 distinguish what was the best  
NOTE Confidence: 0.886035919189453  
00:08:31.286 --> 00:08:33.006 treatment for any given patient.  
NOTE Confidence: 0.886035919189453  
00:08:33.010 --> 00:08:35.476 Because all of these different chemotherapy  
NOTE Confidence: 0.886035919189453  
00:08:35.476 --> 00:08:37.460 combinations looked about the same.  
NOTE Confidence: 0.886035919189453  
00:08:37.460 --> 00:08:39.428 But many people realize that there  
NOTE Confidence: 0.886035919189453  
00:08:39.428 --> 00:08:41.536 were things about lung cancer that  
NOTE Confidence: 0.886035919189453  
00:08:41.536 --> 00:08:43.738 were different than some normal tissue,  
NOTE Confidence: 0.886035919189453  
00:08:43.740 --> 00:08:45.988 and one of them was a high expression  
NOTE Confidence: 0.886035919189453  
00:08:45.988 --> 00:08:48.364 of this EGFR or epidermal growth  
NOTE Confidence: 0.886035919189453  
00:08:48.364 --> 00:08:49.675 factor receptor protein,  
NOTE Confidence: 0.886035919189453  
00:08:49.680 --> 00:08:51.666 and what this cartoon is showing  
NOTE Confidence: 0.886035919189453



00:08:51.666 --> 00:08:53.787 is that the epidermal growth factor  
NOTE Confidence: 0.886035919189453

00:08:53.787 --> 00:08:56.304 receptor is a protein. It's a receptor.  
NOTE Confidence: 0.886035919189453

00:08:56.304 --> 00:08:58.740 It's on the cell surface and it's  
NOTE Confidence: 0.886035919189453

00:08:58.819 --> 00:09:01.888 sitting out there with the GF binding to it.  
NOTE Confidence: 0.886035919189453

00:09:01.890 --> 00:09:04.682 And then it sets off a whole bunch  
NOTE Confidence: 0.886035919189453

00:09:04.682 --> 00:09:05.380 of signaling,  
NOTE Confidence: 0.886035919189453

00:09:05.380 --> 00:09:08.180 which does a lot within the cell regarding.  
NOTE Confidence: 0.886035919189453

00:09:08.180 --> 00:09:10.016 Growth of cells. Survival of cell.  
NOTE Confidence: 0.886035919189453

00:09:10.020 --> 00:09:12.132 So it was thought that each day Fr  
NOTE Confidence: 0.886035919189453

00:09:12.132 --> 00:09:14.607 was likely pretty important in lung cancer,  
NOTE Confidence: 0.886035919189453

00:09:14.610 --> 00:09:16.902 and you'll notice one of these  
NOTE Confidence: 0.886035919189453

00:09:16.902 --> 00:09:18.800 reviews was written by Roy.  
NOTE Confidence: 0.886035919189453

00:09:18.800 --> 00:09:20.875 And so people develop different  
NOTE Confidence: 0.886035919189453

00:09:20.875 --> 00:09:22.535 ways to target EGFR,  
NOTE Confidence: 0.886035919189453

00:09:22.540 --> 00:09:24.620 the most common being these  
NOTE Confidence: 0.886035919189453

00:09:24.620 --> 00:09:25.868 tyrosine kinase inhibitors.

NOTE Confidence: 0.886035919189453  
00:09:25.870 --> 00:09:27.950 So this is the tyrosine  
NOTE Confidence: 0.886035919189453  
00:09:27.950 --> 00:09:29.198 kinase receptor ligands,  
NOTE Confidence: 0.886035919189453  
00:09:29.200 --> 00:09:31.755 binds and then you get signaling down  
NOTE Confidence: 0.886035919189453  
00:09:31.755 --> 00:09:34.609 here and the tyrosine kinase domain.  
NOTE Confidence: 0.886035919189453  
00:09:34.610 --> 00:09:37.184 So these medications that are pill  
NOTE Confidence: 0.886035919189453  
00:09:37.184 --> 00:09:39.960 drugs oral can block that tyrosine  
NOTE Confidence: 0.886035919189453  
00:09:39.960 --> 00:09:42.906 kinase activity than the first of  
NOTE Confidence: 0.886035919189453  
00:09:42.906 --> 00:09:45.138 these developed was to fit Nip.  
NOTE Confidence: 0.886035919189453  
00:09:45.140 --> 00:09:47.023 And I'm going to talk about each  
NOTE Confidence: 0.886035919189453  
00:09:47.023 --> 00:09:48.638 of these drugs a little bit,  
NOTE Confidence: 0.886035919189453  
00:09:48.640 --> 00:09:49.980 but there are other strategies  
NOTE Confidence: 0.886035919189453  
00:09:49.980 --> 00:09:51.052 to hit tyrosine kinases.  
NOTE Confidence: 0.886035919189453  
00:09:51.060 --> 00:09:53.132 One is to block where the leg and  
NOTE Confidence: 0.886035919189453  
00:09:53.132 --> 00:09:54.764 would bind and will talk about  
NOTE Confidence: 0.886035919189453  
00:09:54.764 --> 00:09:56.710 a couple of drugs that do that,  
NOTE Confidence: 0.886035919189453

00:09:56.710 --> 00:09:58.702 and then another is to just take all  
NOTE Confidence: 0.886035919189453

00:09:58.702 --> 00:10:00.648 the Ligue and what would be binding  
NOTE Confidence: 0.886035919189453

00:10:00.648 --> 00:10:02.629 and turning things on and remove it.  
NOTE Confidence: 0.886035919189453

00:10:02.630 --> 00:10:03.970 And that's a different approach  
NOTE Confidence: 0.886035919189453

00:10:03.970 --> 00:10:05.042 that used as well.  
NOTE Confidence: 0.886035919189453

00:10:05.050 --> 00:10:06.592 So just wanted to give this  
NOTE Confidence: 0.886035919189453

00:10:06.592 --> 00:10:08.508 cartoon to set people in mind about  
NOTE Confidence: 0.886035919189453

00:10:08.508 --> 00:10:09.888 thinking how the drugs work.  
NOTE Confidence: 0.886035919189453

00:10:09.890 --> 00:10:11.698 So the first drug to fit him and  
NOTE Confidence: 0.886035919189453

00:10:11.698 --> 00:10:13.429 you see Doctor Herbst of course  
NOTE Confidence: 0.886035919189453

00:10:13.429 --> 00:10:15.259 was involved in that was given  
NOTE Confidence: 0.886035919189453

00:10:15.320 --> 00:10:16.960 to patients with lung cancer.  
NOTE Confidence: 0.886035919189453

00:10:16.960 --> 00:10:19.137 And it was noted that some people,  
NOTE Confidence: 0.886035919189453

00:10:19.140 --> 00:10:21.000 maybe 10%, had these dramatic responses,  
NOTE Confidence: 0.886035919189453

00:10:21.000 --> 00:10:22.196 which was really exciting.  
NOTE Confidence: 0.886035919189453

00:10:22.196 --> 00:10:24.740 But we didn't know how to select them.

NOTE Confidence: 0.886035919189453

00:10:24.740 --> 00:10:27.164 And this led to a larger trial with

NOTE Confidence: 0.886035919189453

00:10:27.164 --> 00:10:29.397 a similar drug called or lot nib,

NOTE Confidence: 0.886035919189453

00:10:29.400 --> 00:10:31.619 where patients receive this drug in the

NOTE Confidence: 0.886035919189453

00:10:31.619 --> 00:10:34.069 second or third line or they got placebo.

NOTE Confidence: 0.886035919189453

00:10:34.070 --> 00:10:35.930 And when you looked at it,

NOTE Confidence: 0.886035919189453

00:10:35.930 --> 00:10:37.490 response rates were about 10%.

NOTE Confidence: 0.886035919189453

00:10:37.490 --> 00:10:38.465 Survival wasn't great,

NOTE Confidence: 0.886035919189453

00:10:38.465 --> 00:10:41.083 but it was better than placebo and so

NOTE Confidence: 0.886035919189453

00:10:41.083 --> 00:10:43.078 this was really exciting at the time.

NOTE Confidence: 0.886035919189453

00:10:43.080 --> 00:10:45.486 To see that two month improvement.

NOTE Confidence: 0.886035919189453

00:10:45.490 --> 00:10:47.075 But what was really interesting

NOTE Confidence: 0.886035919189453

00:10:47.075 --> 00:10:49.076 is people notice that it wasn't

NOTE Confidence: 0.886035919189453

00:10:49.076 --> 00:10:50.866 just random who was responding.

NOTE Confidence: 0.886035919189453

00:10:50.870 --> 00:10:52.628 It tended to be women attended

NOTE Confidence: 0.886035919189453

00:10:52.628 --> 00:10:54.269 the people with the adenocarcinoma

NOTE Confidence: 0.886035919189453

00:10:54.269 --> 00:10:55.909 type of lung cancer,  
NOTE Confidence: 0.886035919189453

00:10:55.910 --> 00:10:58.255 and especially people who had lung cancer,  
NOTE Confidence: 0.868898510932922

00:10:58.260 --> 00:10:59.532 who had never smoked,  
NOTE Confidence: 0.868898510932922

00:10:59.532 --> 00:11:01.862 and also notice that a lot of  
NOTE Confidence: 0.868898510932922

00:11:01.862 --> 00:11:03.627 them were of Asian ethnicity,  
NOTE Confidence: 0.868898510932922

00:11:03.630 --> 00:11:05.772 and so this led to at the  
NOTE Confidence: 0.868898510932922

00:11:05.772 --> 00:11:08.000 study known as the ipass trial,  
NOTE Confidence: 0.868898510932922

00:11:08.000 --> 00:11:09.680 which was conducted in Asia.  
NOTE Confidence: 0.868898510932922

00:11:09.680 --> 00:11:11.871 It was done in people who had  
NOTE Confidence: 0.868898510932922

00:11:11.871 --> 00:11:13.380 very limited smoking history,  
NOTE Confidence: 0.868898510932922

00:11:13.380 --> 00:11:14.748 but who had developed  
NOTE Confidence: 0.868898510932922

00:11:14.748 --> 00:11:15.774 adenocarcinoma lung cancer.  
NOTE Confidence: 0.868898510932922

00:11:15.780 --> 00:11:18.258 And this ended up being mostly women,  
NOTE Confidence: 0.868898510932922

00:11:18.260 --> 00:11:20.996 and they were randomized to either get the  
NOTE Confidence: 0.868898510932922

00:11:20.996 --> 00:11:23.920 EGFR pill drug you fit nib or chemotherapy,  
NOTE Confidence: 0.868898510932922

00:11:23.920 --> 00:11:26.461 and I showed you that before the

NOTE Confidence: 0.868898510932922  
00:11:26.461 --> 00:11:28.879 chemotherapy drugs are all about the same.  
NOTE Confidence: 0.868898510932922  
00:11:28.880 --> 00:11:31.240 When we look at them.  
NOTE Confidence: 0.868898510932922  
00:11:31.240 --> 00:11:32.805 And what was interesting is  
NOTE Confidence: 0.868898510932922  
00:11:32.805 --> 00:11:34.370 when the results came out,  
NOTE Confidence: 0.868898510932922  
00:11:34.370 --> 00:11:36.248 it was very confusing at first,  
NOTE Confidence: 0.868898510932922  
00:11:36.250 --> 00:11:38.128 because when you look at the  
NOTE Confidence: 0.868898510932922  
00:11:38.128 --> 00:11:39.067 progression free survival,  
NOTE Confidence: 0.868898510932922  
00:11:39.070 --> 00:11:40.816 which is the time either that  
NOTE Confidence: 0.868898510932922  
00:11:40.816 --> 00:11:42.614 someone is no longer alive or  
NOTE Confidence: 0.868898510932922  
00:11:42.614 --> 00:11:44.039 that their tumor has started  
NOTE Confidence: 0.868898510932922  
00:11:44.039 --> 00:11:45.949 to grow the progression time,  
NOTE Confidence: 0.868898510932922  
00:11:45.950 --> 00:11:47.828 these curves kind of crossed in.  
NOTE Confidence: 0.868898510932922  
00:11:47.830 --> 00:11:49.395 The chemo was looking better  
NOTE Confidence: 0.868898510932922  
00:11:49.395 --> 00:11:50.647 until about five months,  
NOTE Confidence: 0.868898510932922  
00:11:50.650 --> 00:11:52.554 six months and then the gym fit  
NOTE Confidence: 0.868898510932922

00:11:52.554 --> 00:11:55.029 nib so it wasn't very clear story.

NOTE Confidence: 0.868898510932922

00:11:55.030 --> 00:11:57.102 And when we looked at overall survival

NOTE Confidence: 0.868898510932922

00:11:57.102 --> 00:11:59.298 there wasn't any different so it wasn't

NOTE Confidence: 0.868898510932922

00:11:59.298 --> 00:12:01.610 clear that this definitive drug was really.

NOTE Confidence: 0.868898510932922

00:12:01.610 --> 00:12:05.610 Do anything special but.

NOTE Confidence: 0.868898510932922

00:12:05.610 --> 00:12:06.063 Well,

NOTE Confidence: 0.868898510932922

00:12:06.063 --> 00:12:08.328 that study was being conducted,

NOTE Confidence: 0.868898510932922

00:12:08.330 --> 00:12:11.018 so starting at around 2005 and

NOTE Confidence: 0.868898510932922

00:12:11.018 --> 00:12:14.219 again this is the 15 year story.

NOTE Confidence: 0.868898510932922

00:12:14.220 --> 00:12:15.948 Scientists at several institutions.

NOTE Confidence: 0.868898510932922

00:12:15.948 --> 00:12:18.108 An realize that these patients

NOTE Confidence: 0.868898510932922

00:12:18.108 --> 00:12:20.140 who had these dramatic responses

NOTE Confidence: 0.868898510932922

00:12:20.140 --> 00:12:22.438 they did testing on their tumors,

NOTE Confidence: 0.868898510932922

00:12:22.440 --> 00:12:24.856 and they found that the tumors had a

NOTE Confidence: 0.868898510932922

00:12:24.856 --> 00:12:27.177 change in the Egypt far protein that

NOTE Confidence: 0.868898510932922

00:12:27.177 --> 00:12:29.660 was really related to a mutation that

NOTE Confidence: 0.868898510932922

00:12:29.660 --> 00:12:31.976 had happened in the cancer cells.

NOTE Confidence: 0.868898510932922

00:12:31.980 --> 00:12:33.690 So in the cancer cells,

NOTE Confidence: 0.868898510932922

00:12:33.690 --> 00:12:35.395 EGFR became mutated and became

NOTE Confidence: 0.868898510932922

00:12:35.395 --> 00:12:37.100 turned on all the time.

NOTE Confidence: 0.868898510932922

00:12:37.100 --> 00:12:38.099 Constitutively active,

NOTE Confidence: 0.868898510932922

00:12:38.099 --> 00:12:40.097 and that looked like it was

NOTE Confidence: 0.868898510932922

00:12:40.097 --> 00:12:41.867 what was driving the cancer,

NOTE Confidence: 0.868898510932922

00:12:41.870 --> 00:12:43.495 'cause none of those mutations

NOTE Confidence: 0.868898510932922

00:12:43.495 --> 00:12:45.557 were found in the tumors are

NOTE Confidence: 0.868898510932922

00:12:45.557 --> 00:12:47.069 patients who didn't respond.

NOTE Confidence: 0.868898510932922

00:12:47.070 --> 00:12:48.834 But they were found in almost

NOTE Confidence: 0.868898510932922

00:12:48.834 --> 00:12:50.010 every tumor of patient,

NOTE Confidence: 0.868898510932922

00:12:50.010 --> 00:12:50.775 who did respond,

NOTE Confidence: 0.868898510932922

00:12:50.775 --> 00:12:52.903 and so that led to sort of the

NOTE Confidence: 0.868898510932922

00:12:52.903 --> 00:12:54.891 ah ha moment that changed how we

NOTE Confidence: 0.868898510932922



00:12:54.891 --> 00:12:56.770 think about treating lung cancer,  
NOTE Confidence: 0.868898510932922

00:12:56.770 --> 00:12:59.010 because when they went back and tested  
NOTE Confidence: 0.868898510932922

00:12:59.010 --> 00:13:00.785 the tumor samples from the patients  
NOTE Confidence: 0.868898510932922

00:13:00.785 --> 00:13:02.950 who had been on the I pass trial,  
NOTE Confidence: 0.868898510932922

00:13:02.950 --> 00:13:04.966 they were able to come up with a  
NOTE Confidence: 0.868898510932922

00:13:04.966 --> 00:13:06.458 very different story that patients  
NOTE Confidence: 0.868898510932922

00:13:06.458 --> 00:13:08.324 whose tumors had the EGFR mutation  
NOTE Confidence: 0.868898510932922

00:13:08.324 --> 00:13:10.296 did much better with your fitness,  
NOTE Confidence: 0.868898510932922

00:13:10.300 --> 00:13:11.182 much higher responses.  
NOTE Confidence: 0.868898510932922

00:13:11.182 --> 00:13:13.240 It worked for much longer than chemo,  
NOTE Confidence: 0.868898510932922

00:13:13.240 --> 00:13:14.705 but for people whose tumors  
NOTE Confidence: 0.868898510932922

00:13:14.705 --> 00:13:15.877 did not have that,  
NOTE Confidence: 0.868898510932922

00:13:15.880 --> 00:13:18.687 even though they otherwise look the same.  
NOTE Confidence: 0.868898510932922

00:13:18.690 --> 00:13:20.170 It didn't work at all,  
NOTE Confidence: 0.868898510932922

00:13:20.170 --> 00:13:22.627 and that was the first moment for us in  
NOTE Confidence: 0.868898510932922

00:13:22.627 --> 00:13:25.197 lung cancer to realize we needed to look.

NOTE Confidence: 0.868898510932922  
00:13:25.200 --> 00:13:27.006 We couldn't just determine based on  
NOTE Confidence: 0.868898510932922  
00:13:27.006 --> 00:13:29.117 what the patient looked like or what  
NOTE Confidence: 0.868898510932922  
00:13:29.117 --> 00:13:31.112 their tumor look like under the microscope.  
NOTE Confidence: 0.868898510932922  
00:13:31.120 --> 00:13:32.172 We needed to test,  
NOTE Confidence: 0.868898510932922  
00:13:32.172 --> 00:13:34.669 and if we could find the EGFR mutation,  
NOTE Confidence: 0.868898510932922  
00:13:34.670 --> 00:13:36.609 then we could actually treat the tumors  
NOTE Confidence: 0.868898510932922  
00:13:36.609 --> 00:13:38.230 differently and have better outcomes.  
NOTE Confidence: 0.868898510932922  
00:13:38.230 --> 00:13:40.000 And I'm focusing on EGFR today,  
NOTE Confidence: 0.868898510932922  
00:13:40.000 --> 00:13:41.984 but we now know to think about and  
NOTE Confidence: 0.868898510932922  
00:13:41.984 --> 00:13:43.951 look for mutations in seven different  
NOTE Confidence: 0.868898510932922  
00:13:43.951 --> 00:13:46.063 genes in lung cancer is actually  
NOTE Confidence: 0.853055417537689  
00:13:46.127 --> 00:13:48.460 closer to 10 now, but we have 7 where  
NOTE Confidence: 0.853055417537689  
00:13:48.460 --> 00:13:49.810 we have FDA approved medications  
NOTE Confidence: 0.853055417537689  
00:13:49.870 --> 00:13:51.984 and we can think about using those  
NOTE Confidence: 0.853055417537689  
00:13:51.984 --> 00:13:53.360 instead of chemotherapy upfront.  
NOTE Confidence: 0.853055417537689

00:13:53.360 --> 00:13:55.848 So this was a complete revolution in how  
NOTE Confidence: 0.853055417537689

00:13:55.848 --> 00:13:58.258 we think about treating lung cancer,  
NOTE Confidence: 0.853055417537689

00:13:58.260 --> 00:14:01.410 and this study really was what God is there.  
NOTE Confidence: 0.853055417537689

00:14:01.410 --> 00:14:03.186 So I'm focusing on that quite  
NOTE Confidence: 0.853055417537689

00:14:03.186 --> 00:14:05.610 a bit in this particular trial,  
NOTE Confidence: 0.853055417537689

00:14:05.610 --> 00:14:07.710 by selecting the way they did,  
NOTE Confidence: 0.853055417537689

00:14:07.710 --> 00:14:09.948 about 60% of patients had EGFR  
NOTE Confidence: 0.853055417537689

00:14:09.948 --> 00:14:11.821 mutations and those numbers vary  
NOTE Confidence: 0.853055417537689

00:14:11.821 --> 00:14:14.341 around the world and based on who the  
NOTE Confidence: 0.853055417537689

00:14:14.341 --> 00:14:16.458 person is who's gotten the cancer,  
NOTE Confidence: 0.853055417537689

00:14:16.460 --> 00:14:19.610 but it's not specific dress to women in Asia,  
NOTE Confidence: 0.853055417537689

00:14:19.610 --> 00:14:22.410 have alot of my patients here in California,  
NOTE Confidence: 0.853055417537689

00:14:22.410 --> 00:14:23.806 wouldn't fit that demographic.  
NOTE Confidence: 0.853055417537689

00:14:23.806 --> 00:14:26.470 But yet there tumor hasn't EGFR mutation,  
NOTE Confidence: 0.853055417537689

00:14:26.470 --> 00:14:29.678 and they respond as if anybody else who  
NOTE Confidence: 0.853055417537689

00:14:29.678 --> 00:14:32.986 has that EGFR mutation in their tumor.

NOTE Confidence: 0.853055417537689  
00:14:32.990 --> 00:14:35.666 We've now had multiple other studies  
NOTE Confidence: 0.853055417537689  
00:14:35.666 --> 00:14:39.231 that have looked at giving EGFR TK I  
NOTE Confidence: 0.853055417537689  
00:14:39.231 --> 00:14:41.769 drugs versus chemo in patients whose  
NOTE Confidence: 0.853055417537689  
00:14:41.849 --> 00:14:44.147 tumor have in Egypt are mutation  
NOTE Confidence: 0.853055417537689  
00:14:44.147 --> 00:14:47.800 and you can see that in all of them,  
NOTE Confidence: 0.853055417537689  
00:14:47.800 --> 00:14:50.754 the progression free survival time was much,  
NOTE Confidence: 0.853055417537689  
00:14:50.760 --> 00:14:53.714 much better with the Egypt far drug,  
NOTE Confidence: 0.853055417537689  
00:14:53.720 --> 00:14:55.676 but it wasn't forever,  
NOTE Confidence: 0.853055417537689  
00:14:55.676 --> 00:14:59.047 and that's because we get resistance and  
NOTE Confidence: 0.853055417537689  
00:14:59.047 --> 00:15:02.600 this is a slide goes back a little bit now,  
NOTE Confidence: 0.853055417537689  
00:15:02.600 --> 00:15:05.030 but. Was figured out was that.  
NOTE Confidence: 0.853055417537689  
00:15:05.030 --> 00:15:07.982 In order for a cancer to have an EGFR  
NOTE Confidence: 0.853055417537689  
00:15:07.982 --> 00:15:10.944 mutation that we don't know why that happens,  
NOTE Confidence: 0.853055417537689  
00:15:10.950 --> 00:15:13.379 we're still trying to figure that out.  
NOTE Confidence: 0.853055417537689  
00:15:13.380 --> 00:15:15.420 But when the tumor has  
NOTE Confidence: 0.853055417537689

00:15:15.420 --> 00:15:17.052 that easier for mutation.  
NOTE Confidence: 0.853055417537689

00:15:17.060 --> 00:15:19.055 The tumors respond really well  
NOTE Confidence: 0.853055417537689

00:15:19.055 --> 00:15:21.480 to an EGFR tyrosine kinase drug,  
NOTE Confidence: 0.853055417537689

00:15:21.480 --> 00:15:23.088 but overtime resistance develops  
NOTE Confidence: 0.853055417537689

00:15:23.088 --> 00:15:24.696 because new mutations happen,  
NOTE Confidence: 0.853055417537689

00:15:24.700 --> 00:15:27.486 and in the setting of EGFR with  
NOTE Confidence: 0.853055417537689

00:15:27.486 --> 00:15:29.520 these initially developed EGFR drugs,  
NOTE Confidence: 0.853055417537689

00:15:29.520 --> 00:15:32.736 most of the time when those stopped working,  
NOTE Confidence: 0.853055417537689

00:15:32.740 --> 00:15:35.146 it was because another EGFR mutation  
NOTE Confidence: 0.853055417537689

00:15:35.146 --> 00:15:37.560 developed, and that was called T790M.  
NOTE Confidence: 0.853055417537689

00:15:37.560 --> 00:15:40.283 So we spent many years trying to  
NOTE Confidence: 0.853055417537689

00:15:40.283 --> 00:15:43.188 figure out a way to treat T790M.  
NOTE Confidence: 0.853055417537689

00:15:43.190 --> 00:15:46.070 I have a lot of old studies that  
NOTE Confidence: 0.853055417537689

00:15:46.070 --> 00:15:47.650 didn't go anywhere.  
NOTE Confidence: 0.853055417537689

00:15:47.650 --> 00:15:49.445 And many medications we worked  
NOTE Confidence: 0.853055417537689

00:15:49.445 --> 00:15:51.959 with but then came along this drug.

NOTE Confidence: 0.853055417537689

00:15:51.960 --> 00:15:53.037 Oh, summer NAMM.

NOTE Confidence: 0.853055417537689

00:15:53.037 --> 00:15:55.550 Which is the third generation EGFR drug.

NOTE Confidence: 0.853055417537689

00:15:55.550 --> 00:15:58.056 And it works when T790M is there.

NOTE Confidence: 0.853055417537689

00:15:58.060 --> 00:16:00.573 So what these are showing is you've

NOTE Confidence: 0.853055417537689

00:16:00.573 --> 00:16:01.650 got the line.

NOTE Confidence: 0.853055417537689

00:16:01.650 --> 00:16:03.810 If you've got lines above it,

NOTE Confidence: 0.853055417537689

00:16:03.810 --> 00:16:05.958 that means that the tumors grew,

NOTE Confidence: 0.853055417537689

00:16:05.960 --> 00:16:08.198 but everything below the line means

NOTE Confidence: 0.853055417537689

00:16:08.198 --> 00:16:10.829 that the tumor shrunk so you can see

NOTE Confidence: 0.853055417537689

00:16:10.829 --> 00:16:13.365 that for most of these the tumors were

NOTE Confidence: 0.853055417537689

00:16:13.365 --> 00:16:15.510 shrinking when a patient received

NOTE Confidence: 0.853055417537689

00:16:15.510 --> 00:16:17.746 oh summerton. If after they die.

NOTE Confidence: 0.853055417537689

00:16:17.746 --> 00:16:19.810 Already had either the jefit neighbor

NOTE Confidence: 0.853055417537689

00:16:19.879 --> 00:16:21.769 alot nip those so if they've been

NOTE Confidence: 0.853055417537689

00:16:21.769 --> 00:16:24.249 on a first generation drug and it

NOTE Confidence: 0.853055417537689

00:16:24.249 --> 00:16:25.049 stopped working.  
NOTE Confidence: 0.853055417537689

00:16:25.050 --> 00:16:27.180 And then they took this third  
NOTE Confidence: 0.853055417537689

00:16:27.180 --> 00:16:28.600 generation drug osimertinib most  
NOTE Confidence: 0.853055417537689

00:16:28.666 --> 00:16:30.328 of the time the tumor shrunk,  
NOTE Confidence: 0.853055417537689

00:16:30.330 --> 00:16:32.646 and that's because we were actually  
NOTE Confidence: 0.853055417537689

00:16:32.646 --> 00:16:34.190 getting that T790M target.  
NOTE Confidence: 0.853055417537689

00:16:34.190 --> 00:16:36.710 So to prove that there was a trial  
NOTE Confidence: 0.853055417537689

00:16:36.710 --> 00:16:38.840 for patients who had been found  
NOTE Confidence: 0.853055417537689

00:16:38.840 --> 00:16:40.976 to have Egypt permutation in their  
NOTE Confidence: 0.853055417537689

00:16:41.044 --> 00:16:42.588 tumor at the beginning,  
NOTE Confidence: 0.853055417537689

00:16:42.590 --> 00:16:44.690 they started on a first or  
NOTE Confidence: 0.853055417537689

00:16:44.690 --> 00:16:46.090 second generation EGFR medicine,  
NOTE Confidence: 0.853055417537689

00:16:46.090 --> 00:16:48.190 and then when it stopped working,  
NOTE Confidence: 0.853055417537689

00:16:48.190 --> 00:16:50.608 they were on a trial randomized  
NOTE Confidence: 0.853055417537689

00:16:50.608 --> 00:16:52.220 to either ghetto smart  
NOTE Confidence: 0.841263711452484

00:16:52.295 --> 00:16:54.310 nib or to get chemotherapy.

NOTE Confidence: 0.841263711452484

00:16:54.310 --> 00:16:56.788 And what this showed us was that

NOTE Confidence: 0.841263711452484

00:16:56.788 --> 00:16:58.280 progression free survival was

NOTE Confidence: 0.841263711452484

00:16:58.280 --> 00:17:00.463 clearly better with, uh, oh, summer.

NOTE Confidence: 0.841263711452484

00:17:00.463 --> 00:17:01.907 New versus the chemotherapy.

NOTE Confidence: 0.841263711452484

00:17:01.910 --> 00:17:04.360 So it became standard that you would

NOTE Confidence: 0.841263711452484

00:17:04.360 --> 00:17:06.581 test when someone was diagnosed if

NOTE Confidence: 0.841263711452484

00:17:06.581 --> 00:17:08.783 their tumor had the EGFR mutation,

NOTE Confidence: 0.841263711452484

00:17:08.790 --> 00:17:10.580 you would start them on

NOTE Confidence: 0.841263711452484

00:17:10.580 --> 00:17:12.770 our lot nib or defend him,

NOTE Confidence: 0.841263711452484

00:17:12.770 --> 00:17:14.580 and when that stopped working,

NOTE Confidence: 0.841263711452484

00:17:14.580 --> 00:17:17.114 if the T790M mutation was there then,

NOTE Confidence: 0.841263711452484

00:17:17.120 --> 00:17:19.430 oh, Smyrna was a better choice

NOTE Confidence: 0.841263711452484

00:17:19.430 --> 00:17:22.060 than going with the chemotherapy.

NOTE Confidence: 0.841263711452484

00:17:22.060 --> 00:17:24.400 But finding the T790M wasn't perfect,

NOTE Confidence: 0.841263711452484

00:17:24.400 --> 00:17:26.350 so there were several different

NOTE Confidence: 0.841263711452484



00:17:26.350 --> 00:17:27.910 ways to do that.  
NOTE Confidence: 0.841263711452484

00:17:27.910 --> 00:17:31.078 You could either look with tissue.  
NOTE Confidence: 0.841263711452484

00:17:31.080 --> 00:17:33.054 Or in the blood with plasma testing.  
NOTE Confidence: 0.841263711452484

00:17:33.060 --> 00:17:35.034 And we also did some urine testing,  
NOTE Confidence: 0.841263711452484

00:17:35.040 --> 00:17:37.264 but we don't do that so much anymore  
NOTE Confidence: 0.841263711452484

00:17:37.264 --> 00:17:39.523 and what this is showing is that most  
NOTE Confidence: 0.841263711452484

00:17:39.523 --> 00:17:41.819 of the time you could find that T790M  
NOTE Confidence: 0.841263711452484

00:17:41.819 --> 00:17:43.907 in the tissue and in the plasma,  
NOTE Confidence: 0.841263711452484

00:17:43.907 --> 00:17:45.792 but there were sometimes you  
NOTE Confidence: 0.841263711452484

00:17:45.792 --> 00:17:48.338 could only find it in that issue.  
NOTE Confidence: 0.841263711452484

00:17:48.340 --> 00:17:49.905 And that's because it wasn't  
NOTE Confidence: 0.841263711452484

00:17:49.905 --> 00:17:52.150 being shed out into the DNA wasn't  
NOTE Confidence: 0.841263711452484

00:17:52.150 --> 00:17:53.695 going out into the blood.  
NOTE Confidence: 0.841263711452484

00:17:53.700 --> 00:17:55.877 Or you only found in the plasma,  
NOTE Confidence: 0.841263711452484

00:17:55.880 --> 00:17:57.124 and that's perhaps because  
NOTE Confidence: 0.841263711452484

00:17:57.124 --> 00:17:58.679 when you did the biopsy,

NOTE Confidence: 0.841263711452484  
00:17:58.680 --> 00:18:01.160 you didn't get enough of the cancer cells,  
NOTE Confidence: 0.841263711452484  
00:18:01.160 --> 00:18:02.835 or there's some heterogeneity meeting  
NOTE Confidence: 0.841263711452484  
00:18:02.835 --> 00:18:05.423 that not all of the cancer cells change  
NOTE Confidence: 0.841263711452484  
00:18:05.423 --> 00:18:07.700 at the same time in the same way,  
NOTE Confidence: 0.841263711452484  
00:18:07.700 --> 00:18:09.716 so you can have areas that are  
NOTE Confidence: 0.841263711452484  
00:18:09.716 --> 00:18:11.429 resistant because of this mutation.  
NOTE Confidence: 0.841263711452484  
00:18:11.430 --> 00:18:12.980 Other areas that are not,  
NOTE Confidence: 0.841263711452484  
00:18:12.980 --> 00:18:15.143 and so I'm not going to go  
NOTE Confidence: 0.841263711452484  
00:18:15.143 --> 00:18:17.028 into that today in one hour.  
NOTE Confidence: 0.841263711452484  
00:18:17.030 --> 00:18:18.258 You can't cover everything,  
NOTE Confidence: 0.841263711452484  
00:18:18.258 --> 00:18:20.484 but I wanted to at least mention  
NOTE Confidence: 0.841263711452484  
00:18:20.484 --> 00:18:22.079 this because it is important  
NOTE Confidence: 0.841263711452484  
00:18:22.079 --> 00:18:23.950 to know that when you have.  
NOTE Confidence: 0.841263711452484  
00:18:23.950 --> 00:18:24.241 Cancer.  
NOTE Confidence: 0.841263711452484  
00:18:24.241 --> 00:18:25.696 It's evolving overtime an the  
NOTE Confidence: 0.841263711452484

00:18:25.696 --> 00:18:27.599 way that we find out more about  
NOTE Confidence: 0.841263711452484

00:18:27.599 --> 00:18:29.181 it as we need to sample it.  
NOTE Confidence: 0.841263711452484

00:18:29.190 --> 00:18:31.017 An historically that was always with tissue.  
NOTE Confidence: 0.841263711452484

00:18:31.020 --> 00:18:33.036 But now we can look at it with  
NOTE Confidence: 0.841263711452484

00:18:33.036 --> 00:18:34.429 these plasma tests as well,  
NOTE Confidence: 0.841263711452484

00:18:34.430 --> 00:18:36.536 but that's all I'm going to  
NOTE Confidence: 0.841263711452484

00:18:36.536 --> 00:18:37.940 say on that topic.  
NOTE Confidence: 0.841263711452484

00:18:37.940 --> 00:18:38.247 OK,  
NOTE Confidence: 0.841263711452484

00:18:38.247 --> 00:18:40.703 so we know to test we know to  
NOTE Confidence: 0.841263711452484

00:18:40.703 --> 00:18:43.110 give a first generation drugs.  
NOTE Confidence: 0.841263711452484

00:18:43.110 --> 00:18:44.422 We know T790M develops.  
NOTE Confidence: 0.841263711452484

00:18:44.422 --> 00:18:47.530 So then you use the third generation drug.  
NOTE Confidence: 0.841263711452484

00:18:47.530 --> 00:18:49.380 But of course people wondered.  
NOTE Confidence: 0.841263711452484

00:18:49.380 --> 00:18:51.498 Why don't we just give this  
NOTE Confidence: 0.841263711452484

00:18:51.498 --> 00:18:53.364 third generation drug 1st and  
NOTE Confidence: 0.841263711452484

00:18:53.364 --> 00:18:54.908 then T790M won't develop?

NOTE Confidence: 0.841263711452484

00:18:54.910 --> 00:18:57.178 So that was this flora trial

NOTE Confidence: 0.841263711452484

00:18:57.178 --> 00:18:59.209 where patients who are newly

NOTE Confidence: 0.841263711452484

00:18:59.209 --> 00:19:01.837 diagnosed and found to have EGFR

NOTE Confidence: 0.841263711452484

00:19:01.837 --> 00:19:04.025 mutation either goto summer nib

NOTE Confidence: 0.841263711452484

00:19:04.025 --> 00:19:06.419 or got a first generation drugs.

NOTE Confidence: 0.841263711452484

00:19:06.420 --> 00:19:08.020 And that study clearly showed

NOTE Confidence: 0.841263711452484

00:19:08.020 --> 00:19:10.089 that to Smyrna was better for

NOTE Confidence: 0.841263711452484

00:19:10.089 --> 00:19:11.717 that progression free survival,

NOTE Confidence: 0.841263711452484

00:19:11.720 --> 00:19:13.705 meaning that it took longer

NOTE Confidence: 0.841263711452484

00:19:13.705 --> 00:19:16.120 before the cancer started to grow.

NOTE Confidence: 0.841263711452484

00:19:16.120 --> 00:19:16.493 However,

NOTE Confidence: 0.841263711452484

00:19:16.493 --> 00:19:19.104 it also led to overall survival improvement,

NOTE Confidence: 0.841263711452484

00:19:19.110 --> 00:19:20.875 and that's because even though

NOTE Confidence: 0.841263711452484

00:19:20.875 --> 00:19:22.640 theoretically if you started on

NOTE Confidence: 0.841263711452484

00:19:22.703 --> 00:19:24.663 a first generation drugs and

NOTE Confidence: 0.841263711452484

00:19:24.663 --> 00:19:25.839 then developed resistance,  
NOTE Confidence: 0.841263711452484

00:19:25.840 --> 00:19:28.360 you could go on to Summerton  
NOTE Confidence: 0.841263711452484

00:19:28.360 --> 00:19:30.760 if it was T790M.  
NOTE Confidence: 0.841263711452484

00:19:30.760 --> 00:19:32.680 There are other things that cause  
NOTE Confidence: 0.841263711452484

00:19:32.680 --> 00:19:34.721 resistance and so delaying that time  
NOTE Confidence: 0.841263711452484

00:19:34.721 --> 00:19:36.466 to resistance with the osimertinib,  
NOTE Confidence: 0.841263711452484

00:19:36.470 --> 00:19:38.808 even when it's not resistance due to  
NOTE Confidence: 0.841263711452484

00:19:38.808 --> 00:19:40.500 T790M overall survival was better,  
NOTE Confidence: 0.841263711452484

00:19:40.500 --> 00:19:42.558 and so this has become the  
NOTE Confidence: 0.841263711452484

00:19:42.558 --> 00:19:44.200 standard approach in the US.  
NOTE Confidence: 0.841263711452484

00:19:44.200 --> 00:19:45.880 But unfortunately as you see,  
NOTE Confidence: 0.834039330482483

00:19:45.880 --> 00:19:47.896 these curves eventually do come down.  
NOTE Confidence: 0.834039330482483

00:19:47.900 --> 00:19:49.380 We're not curing people,  
NOTE Confidence: 0.834039330482483

00:19:49.380 --> 00:19:51.600 and therefore we still need to  
NOTE Confidence: 0.834039330482483

00:19:51.674 --> 00:19:53.828 think about better things to do.  
NOTE Confidence: 0.834039330482483

00:19:53.830 --> 00:19:55.405 So we kind of summarize

NOTE Confidence: 0.834039330482483  
00:19:55.405 --> 00:19:56.980 this first part about EGFR.  
NOTE Confidence: 0.834039330482483  
00:19:56.980 --> 00:19:59.815 We need to test to find the Jaffar mutation,  
NOTE Confidence: 0.834039330482483  
00:19:59.820 --> 00:20:01.080 and usually that's done  
NOTE Confidence: 0.834039330482483  
00:20:01.080 --> 00:20:02.340 with the tissue testing.  
NOTE Confidence: 0.834039330482483  
00:20:02.340 --> 00:20:04.342 But we can also sometimes find it  
NOTE Confidence: 0.834039330482483  
00:20:04.342 --> 00:20:06.428 in the plasma with blood testing.  
NOTE Confidence: 0.834039330482483  
00:20:06.430 --> 00:20:08.320 If you find the Jaffar mutation,  
NOTE Confidence: 0.834039330482483  
00:20:08.320 --> 00:20:09.900 we start on an EGFR.  
NOTE Confidence: 0.834039330482483  
00:20:09.900 --> 00:20:11.168 TKI osimertinib is what  
NOTE Confidence: 0.834039330482483  
00:20:11.168 --> 00:20:13.360 we tend to use in the US,  
NOTE Confidence: 0.834039330482483  
00:20:13.360 --> 00:20:15.358 but there are multiple other EGFR  
NOTE Confidence: 0.834039330482483  
00:20:15.358 --> 00:20:17.032 tyrosine kinase drugs which are  
NOTE Confidence: 0.834039330482483  
00:20:17.032 --> 00:20:18.718 approved in the US and globally,  
NOTE Confidence: 0.834039330482483  
00:20:18.720 --> 00:20:22.600 and so those are still used as well.  
NOTE Confidence: 0.834039330482483  
00:20:22.600 --> 00:20:23.964 And as I mentioned,  
NOTE Confidence: 0.834039330482483

00:20:23.964 --> 00:20:25.669 we're still thwarted by resistance.  
NOTE Confidence: 0.834039330482483

00:20:25.670 --> 00:20:26.702 So with Osimertinib,  
NOTE Confidence: 0.834039330482483

00:20:26.702 --> 00:20:29.110 it's not such a simple story like  
NOTE Confidence: 0.834039330482483

00:20:29.175 --> 00:20:31.464 it is with the 1st generation drugs,  
NOTE Confidence: 0.834039330482483

00:20:31.470 --> 00:20:33.510 where we get one resistance pathway,  
NOTE Confidence: 0.834039330482483

00:20:33.510 --> 00:20:35.424 which is that T790M resistance as  
NOTE Confidence: 0.834039330482483

00:20:35.424 --> 00:20:37.122 the predominant one when there's  
NOTE Confidence: 0.834039330482483

00:20:37.122 --> 00:20:39.270 osimertinib resistance are a lot of  
NOTE Confidence: 0.834039330482483

00:20:39.270 --> 00:20:41.009 different things that can happen.  
NOTE Confidence: 0.834039330482483

00:20:41.010 --> 00:20:43.738 You can get other EGFR mutations and C.  
NOTE Confidence: 0.834039330482483

00:20:43.740 --> 00:20:47.490 797 and T 797 S is the most common of those,  
NOTE Confidence: 0.834039330482483

00:20:47.490 --> 00:20:50.202 but there are a lot of other pathways  
NOTE Confidence: 0.834039330482483

00:20:50.202 --> 00:20:52.650 that can go be abnormal as well.  
NOTE Confidence: 0.834039330482483

00:20:52.650 --> 00:20:54.320 And so it's quite complex,  
NOTE Confidence: 0.834039330482483

00:20:54.320 --> 00:20:56.750 and there's a lot of research  
NOTE Confidence: 0.834039330482483

00:20:56.750 --> 00:20:57.965 being done there.

NOTE Confidence: 0.834039330482483  
00:20:57.970 --> 00:21:00.245 And this is just a graphic showing  
NOTE Confidence: 0.834039330482483  
00:21:00.245 --> 00:21:02.110 some of those resistances,  
NOTE Confidence: 0.834039330482483  
00:21:02.110 --> 00:21:04.357 so I talked about the T790M here  
NOTE Confidence: 0.834039330482483  
00:21:04.357 --> 00:21:06.620 with first and second generation.  
NOTE Confidence: 0.834039330482483  
00:21:06.620 --> 00:21:08.530 But there's also overexpression of  
NOTE Confidence: 0.834039330482483  
00:21:08.530 --> 00:21:11.226 met and mutations in other genes and  
NOTE Confidence: 0.834039330482483  
00:21:11.226 --> 00:21:13.386 also a transformation to small cell,  
NOTE Confidence: 0.834039330482483  
00:21:13.390 --> 00:21:15.270 so it's not always straightforward.  
NOTE Confidence: 0.834039330482483  
00:21:15.270 --> 00:21:17.508 And then with Osama RNIB there  
NOTE Confidence: 0.834039330482483  
00:21:17.508 --> 00:21:20.170 can be changes in what the EGFR.  
NOTE Confidence: 0.834039330482483  
00:21:20.170 --> 00:21:22.006 Just kind of percentage of expression  
NOTE Confidence: 0.834039330482483  
00:21:22.006 --> 00:21:24.354 of the protein is it's never gone  
NOTE Confidence: 0.834039330482483  
00:21:24.354 --> 00:21:26.129 that Egypt permutations never gone,  
NOTE Confidence: 0.834039330482483  
00:21:26.130 --> 00:21:28.447 but the way it's expressed is different.  
NOTE Confidence: 0.834039330482483  
00:21:28.450 --> 00:21:30.767 But you also can have met overexpression  
NOTE Confidence: 0.834039330482483



00:21:30.767 --> 00:21:32.992 is fairly common, or changes in BRAF.  
NOTE Confidence: 0.834039330482483

00:21:32.992 --> 00:21:34.840 We just were talking about a  
NOTE Confidence: 0.834039330482483

00:21:34.905 --> 00:21:36.060 case this morning.  
NOTE Confidence: 0.834039330482483

00:21:36.060 --> 00:21:37.348 Stanford, with another patient  
NOTE Confidence: 0.834039330482483

00:21:37.348 --> 00:21:39.700 who had been on no smart Niman,  
NOTE Confidence: 0.834039330482483

00:21:39.700 --> 00:21:42.017 then developed in be reputation and many,  
NOTE Confidence: 0.834039330482483

00:21:42.020 --> 00:21:42.648 many others.  
NOTE Confidence: 0.834039330482483

00:21:42.648 --> 00:21:44.846 So again, it's quite complex as we  
NOTE Confidence: 0.834039330482483

00:21:44.846 --> 00:21:46.976 talk about bypass tracks in Egypt,  
NOTE Confidence: 0.834039330482483

00:21:46.980 --> 00:21:48.072 our target alterations.  
NOTE Confidence: 0.834039330482483

00:21:48.072 --> 00:21:50.256 So then what do you do?  
NOTE Confidence: 0.834039330482483

00:21:50.260 --> 00:21:51.148 You gotta think.  
NOTE Confidence: 0.834039330482483

00:21:51.148 --> 00:21:52.934 Outside of that, here's the target.  
NOTE Confidence: 0.834039330482483

00:21:52.934 --> 00:21:53.828 Hit the target.  
NOTE Confidence: 0.834039330482483

00:21:53.830 --> 00:21:55.606 We've got to be broader that.  
NOTE Confidence: 0.834039330482483

00:21:55.610 --> 00:21:56.794 Here's a target hit.

NOTE Confidence: 0.834039330482483  
00:21:56.794 --> 00:21:57.978 The target is great,  
NOTE Confidence: 0.834039330482483  
00:21:57.980 --> 00:21:59.465 and it's helped people tremendously  
NOTE Confidence: 0.834039330482483  
00:21:59.465 --> 00:22:01.250 for an extended period of time.  
NOTE Confidence: 0.834039330482483  
00:22:01.250 --> 00:22:03.626 But we want to extend it even further.  
NOTE Confidence: 0.834039330482483  
00:22:03.630 --> 00:22:05.110 So what can we do?  
NOTE Confidence: 0.834039330482483  
00:22:05.110 --> 00:22:06.595 We try something else so  
NOTE Confidence: 0.834039330482483  
00:22:06.595 --> 00:22:07.783 we have anti angiogenesis.  
NOTE Confidence: 0.834039330482483  
00:22:07.790 --> 00:22:08.970 Is one of those,  
NOTE Confidence: 0.834039330482483  
00:22:08.970 --> 00:22:10.740 and that's getting at the fact  
NOTE Confidence: 0.834039330482483  
00:22:10.804 --> 00:22:12.574 that in order for some tumor  
NOTE Confidence: 0.834039330482483  
00:22:12.574 --> 00:22:14.320 cells to grow into a tumor,  
NOTE Confidence: 0.834039330482483  
00:22:14.320 --> 00:22:16.984 they need to have blood vessels to feed them.  
NOTE Confidence: 0.834039330482483  
00:22:16.990 --> 00:22:18.480 And so this is angiogenesis.  
NOTE Confidence: 0.834039330482483  
00:22:18.480 --> 00:22:20.010 And that's where we get.  
NOTE Confidence: 0.834039330482483  
00:22:20.010 --> 00:22:23.420 Drugs such as Bevis is a map and many others,  
NOTE Confidence: 0.834039330482483

00:22:23.420 --> 00:22:25.688 and there's been a ton of trials  
NOTE Confidence: 0.834039330482483

00:22:25.688 --> 00:22:27.848 noticing that in the EGFR setting,  
NOTE Confidence: 0.834039330482483

00:22:27.850 --> 00:22:29.896 veg F is also very important,  
NOTE Confidence: 0.834039330482483

00:22:29.900 --> 00:22:32.650 and so a lot of trials looking at in a  
NOTE Confidence: 0.834039330482483

00:22:32.727 --> 00:22:35.695 patient with Egypt or mutant lung cancer,  
NOTE Confidence: 0.800156116485596

00:22:35.700 --> 00:22:37.740 you can give the EGFR medicine,  
NOTE Confidence: 0.800156116485596

00:22:37.740 --> 00:22:39.788 but you can also give it with anti  
NOTE Confidence: 0.800156116485596

00:22:39.788 --> 00:22:42.078 veg F therapy and that theoretically  
NOTE Confidence: 0.800156116485596

00:22:42.078 --> 00:22:44.213 should make a big difference.  
NOTE Confidence: 0.800156116485596

00:22:44.220 --> 00:22:47.190 So one of the first trials was the beta  
NOTE Confidence: 0.800156116485596

00:22:47.190 --> 00:22:50.377 trial led by Doctor Herbst an in this study.  
NOTE Confidence: 0.800156116485596

00:22:50.380 --> 00:22:52.702 It wasn't selected for patients with  
NOTE Confidence: 0.800156116485596

00:22:52.702 --> 00:22:54.952 EGFR mutation because this was done  
NOTE Confidence: 0.800156116485596

00:22:54.952 --> 00:22:57.185 before we knew about the EGFR mutations  
NOTE Confidence: 0.800156116485596

00:22:57.185 --> 00:22:59.875 and we were just giving our lot nib to  
NOTE Confidence: 0.800156116485596

00:22:59.875 --> 00:23:01.796 people after they already had chemo.

NOTE Confidence: 0.800156116485596

00:23:01.796 --> 00:23:04.160 But this showed that even without that,

NOTE Confidence: 0.800156116485596

00:23:04.160 --> 00:23:06.584 giving the bevacizumab added to the

NOTE Confidence: 0.800156116485596

00:23:06.584 --> 00:23:08.200 Erlotinib improved progression free

NOTE Confidence: 0.800156116485596

00:23:08.260 --> 00:23:10.409 survival Anne in the small group of

NOTE Confidence: 0.800156116485596

00:23:10.409 --> 00:23:12.529 patients who would went back and found

NOTE Confidence: 0.800156116485596

00:23:12.529 --> 00:23:14.591 that they actually had an EGFR mutation.

NOTE Confidence: 0.800156116485596

00:23:14.591 --> 00:23:17.048 There was a signal that there might

NOTE Confidence: 0.800156116485596

00:23:17.048 --> 00:23:19.678 even be an overall survival benefit by

NOTE Confidence: 0.800156116485596

00:23:19.678 --> 00:23:22.598 adding the beva system up to her latinum.

NOTE Confidence: 0.800156116485596

00:23:22.600 --> 00:23:24.766 So there's been multiple other trials.

NOTE Confidence: 0.800156116485596

00:23:24.770 --> 00:23:28.019 This was a phase two study done in Japan,

NOTE Confidence: 0.800156116485596

00:23:28.020 --> 00:23:30.600 where patients with EGFR mutant lung

NOTE Confidence: 0.800156116485596

00:23:30.600 --> 00:23:32.962 cancer received either or lot nib

NOTE Confidence: 0.800156116485596

00:23:32.962 --> 00:23:35.234 the pill everyday or a lot in it.

NOTE Confidence: 0.800156116485596

00:23:35.240 --> 00:23:37.238 Plus the breakfast is a Babin

NOTE Confidence: 0.800156116485596

00:23:37.238 --> 00:23:39.210 beverages and Maps and antibody.  
NOTE Confidence: 0.800156116485596

00:23:39.210 --> 00:23:41.370 It's given Ivy every three weeks,  
NOTE Confidence: 0.800156116485596

00:23:41.370 --> 00:23:43.416 and this study showed a marked  
NOTE Confidence: 0.800156116485596

00:23:43.416 --> 00:23:45.340 improvement in progression free survival.  
NOTE Confidence: 0.800156116485596

00:23:45.340 --> 00:23:47.145 This actually led to approval  
NOTE Confidence: 0.800156116485596

00:23:47.145 --> 00:23:48.950 of this combination in Europe,  
NOTE Confidence: 0.800156116485596

00:23:48.950 --> 00:23:50.870 but not in the US.  
NOTE Confidence: 0.800156116485596

00:23:50.870 --> 00:23:52.770 With longer term follow-up, though,  
NOTE Confidence: 0.800156116485596

00:23:52.770 --> 00:23:55.325 it turned out that Despite that huge  
NOTE Confidence: 0.800156116485596

00:23:55.325 --> 00:23:56.950 progression free survival benefit,  
NOTE Confidence: 0.800156116485596

00:23:56.950 --> 00:23:59.230 there was no overall survival benefit,  
NOTE Confidence: 0.800156116485596

00:23:59.230 --> 00:24:02.198 and so it's a little bit unclear what  
NOTE Confidence: 0.800156116485596

00:24:02.198 --> 00:24:04.690 we're doing with this combination.  
NOTE Confidence: 0.800156116485596

00:24:04.690 --> 00:24:07.035 Perhaps it's helpful to prolong the time  
NOTE Confidence: 0.800156116485596

00:24:07.035 --> 00:24:09.507 that there are lot name stops working.  
NOTE Confidence: 0.800156116485596

00:24:09.510 --> 00:24:11.561 It turns out that if you're on

NOTE Confidence: 0.800156116485596

00:24:11.561 --> 00:24:13.629 our lot nib and bevacizumab,

NOTE Confidence: 0.800156116485596

00:24:13.630 --> 00:24:15.006 the most common resistance

NOTE Confidence: 0.800156116485596

00:24:15.006 --> 00:24:16.726 pathway still is that T790M.

NOTE Confidence: 0.800156116485596

00:24:16.730 --> 00:24:18.794 So if you're on this combination

NOTE Confidence: 0.800156116485596

00:24:18.794 --> 00:24:20.170 and then resistance develops,

NOTE Confidence: 0.800156116485596

00:24:20.170 --> 00:24:22.914 you can go on to get the oh,

NOTE Confidence: 0.800156116485596

00:24:22.920 --> 00:24:24.942 Smyrna, but there are other things

NOTE Confidence: 0.800156116485596

00:24:24.942 --> 00:24:26.696 that happen besides T790M and

NOTE Confidence: 0.800156116485596

00:24:26.696 --> 00:24:28.426 then no overall survival benefit,

NOTE Confidence: 0.800156116485596

00:24:28.430 --> 00:24:29.914 so little bit unclear.

NOTE Confidence: 0.800156116485596

00:24:29.914 --> 00:24:32.600 There was a randomized phase three trial,

NOTE Confidence: 0.800156116485596

00:24:32.600 --> 00:24:33.676 also done in Japan,

NOTE Confidence: 0.800156116485596

00:24:33.676 --> 00:24:35.736 which had very similar results in Nice

NOTE Confidence: 0.800156116485596

00:24:35.736 --> 00:24:37.316 progression free survival benefit,

NOTE Confidence: 0.800156116485596

00:24:37.320 --> 00:24:38.900 but no overall survival benefit.

NOTE Confidence: 0.800156116485596

00:24:38.900 --> 00:24:40.148 And this is news.  
NOTE Confidence: 0.800156116485596

00:24:40.148 --> 00:24:42.412 This just was presented at our ASCO  
NOTE Confidence: 0.800156116485596

00:24:42.412 --> 00:24:44.964 meeting in June of 2020 show we were  
NOTE Confidence: 0.800156116485596

00:24:44.964 --> 00:24:47.445 waiting on this and now we kind of  
NOTE Confidence: 0.800156116485596

00:24:47.445 --> 00:24:48.994 seeing this similar story emerging,  
NOTE Confidence: 0.800156116485596

00:24:48.994 --> 00:24:51.810 but it's more complex than that in the US.  
NOTE Confidence: 0.800156116485596

00:24:51.810 --> 00:24:54.015 We also have this or lot inhibin  
NOTE Confidence: 0.800156116485596

00:24:54.015 --> 00:24:54.960 Rammus serum app,  
NOTE Confidence: 0.800156116485596

00:24:54.960 --> 00:24:57.725 so I showed at the very beginning.  
NOTE Confidence: 0.800156116485596

00:24:57.730 --> 00:24:59.470 The different ways to target  
NOTE Confidence: 0.800156116485596

00:24:59.470 --> 00:25:00.514 these tyrosine kinase.  
NOTE Confidence: 0.800156116485596

00:25:00.520 --> 00:25:02.710 So the first where the tyrosine  
NOTE Confidence: 0.800156116485596

00:25:02.710 --> 00:25:04.879 kinase inhibitors which work in the  
NOTE Confidence: 0.800156116485596

00:25:04.879 --> 00:25:06.799 cell at the tyrosine kinase domain.  
NOTE Confidence: 0.800156116485596

00:25:06.800 --> 00:25:09.243 But then I also showed two different  
NOTE Confidence: 0.800156116485596

00:25:09.243 --> 00:25:10.290 strategies for antibodies,

NOTE Confidence: 0.800156116485596  
00:25:10.290 --> 00:25:12.414 one the bevacizumab type or its  
NOTE Confidence: 0.800156116485596  
00:25:12.414 --> 00:25:14.858 binding to the leg and so sucking  
NOTE Confidence: 0.800156116485596  
00:25:14.858 --> 00:25:17.527 all the leg and away the other binds  
NOTE Confidence: 0.800156116485596  
00:25:17.527 --> 00:25:20.068 to the receptor and sort of blocks.  
NOTE Confidence: 0.800156116485596  
00:25:20.070 --> 00:25:22.164 The way the receptor works oramus  
NOTE Confidence: 0.800156116485596  
00:25:22.164 --> 00:25:24.598 serum AB is blocking veg F receptor.  
NOTE Confidence: 0.800156116485596  
00:25:24.600 --> 00:25:26.924 So you've got our Latin if the  
NOTE Confidence: 0.800156116485596  
00:25:26.924 --> 00:25:28.520 tyrosine kinase inhibitor blocking.  
NOTE Confidence: 0.800156116485596  
00:25:28.520 --> 00:25:29.796 The tyrosine kinase activity  
NOTE Confidence: 0.800156116485596  
00:25:29.796 --> 00:25:31.710 and then veg F Knotty Jeff  
NOTE Confidence: 0.832051396369934  
00:25:31.768 --> 00:25:34.029 but Jeff related is also being blocked,  
NOTE Confidence: 0.832051396369934  
00:25:34.030 --> 00:25:36.530 so you get a blockage that way and you see  
NOTE Confidence: 0.832051396369934  
00:25:36.590 --> 00:25:39.206 this nice progression free survival benefit.  
NOTE Confidence: 0.832051396369934  
00:25:39.210 --> 00:25:40.830 But we haven't seen the  
NOTE Confidence: 0.832051396369934  
00:25:40.830 --> 00:25:42.126 overall survival data yet.  
NOTE Confidence: 0.832051396369934



00:25:42.130 --> 00:25:43.680 This combination is approved as  
NOTE Confidence: 0.832051396369934

00:25:43.680 --> 00:25:45.690 an option in the United States,  
NOTE Confidence: 0.832051396369934

00:25:45.690 --> 00:25:48.105 but I think that we're waiting to  
NOTE Confidence: 0.832051396369934

00:25:48.105 --> 00:25:50.025 see what that overall survival  
NOTE Confidence: 0.832051396369934

00:25:50.025 --> 00:25:52.449 data is going to look like.  
NOTE Confidence: 0.832051396369934

00:25:52.450 --> 00:25:54.767 Now I've talked about her Latin appear,  
NOTE Confidence: 0.832051396369934

00:25:54.770 --> 00:25:56.420 but you're thinking the beginning.  
NOTE Confidence: 0.832051396369934

00:25:56.420 --> 00:25:58.406 You were telling me that Osimertinib  
NOTE Confidence: 0.832051396369934

00:25:58.406 --> 00:25:59.730 is preferred over these.  
NOTE Confidence: 0.832051396369934

00:25:59.730 --> 00:26:00.428 So what?  
NOTE Confidence: 0.832051396369934

00:26:00.428 --> 00:26:02.522 Where is the oh summer nimbuses  
NOTE Confidence: 0.832051396369934

00:26:02.522 --> 00:26:04.700 amount data will hear some of it.  
NOTE Confidence: 0.832051396369934

00:26:04.700 --> 00:26:07.012 So this was data that Hanyu and the  
NOTE Confidence: 0.832051396369934

00:26:07.012 --> 00:26:09.328 Memorial Sloan Kettering Group put together.  
NOTE Confidence: 0.832051396369934

00:26:09.330 --> 00:26:10.582 This is not randomized.  
NOTE Confidence: 0.832051396369934

00:26:10.582 --> 00:26:12.147 This is just patients getting

NOTE Confidence: 0.832051396369934  
00:26:12.147 --> 00:26:13.969 oh smart nib and bevacizumab,  
NOTE Confidence: 0.832051396369934  
00:26:13.970 --> 00:26:15.750 and the toxicity was manageable  
NOTE Confidence: 0.832051396369934  
00:26:15.750 --> 00:26:17.849 and the response rate was very  
NOTE Confidence: 0.832051396369934  
00:26:17.849 --> 00:26:20.260 high at 80% and the median time to  
NOTE Confidence: 0.832051396369934  
00:26:20.260 --> 00:26:21.920 win the drugs combination stopped  
NOTE Confidence: 0.832051396369934  
00:26:21.980 --> 00:26:23.640 working was about 19 months.  
NOTE Confidence: 0.832051396369934  
00:26:23.640 --> 00:26:24.768 So that's interesting.  
NOTE Confidence: 0.832051396369934  
00:26:24.768 --> 00:26:25.896 It's not overwhelming,  
NOTE Confidence: 0.832051396369934  
00:26:25.900 --> 00:26:26.746 but interesting.  
NOTE Confidence: 0.832051396369934  
00:26:26.746 --> 00:26:29.284 However, there is this very confusing  
NOTE Confidence: 0.832051396369934  
00:26:29.284 --> 00:26:31.539 presentation that we saw just last month,  
NOTE Confidence: 0.832051396369934  
00:26:31.540 --> 00:26:33.802 two months ago now in September  
NOTE Confidence: 0.832051396369934  
00:26:33.802 --> 00:26:36.049 at the ESMO meeting the 2020,  
NOTE Confidence: 0.832051396369934  
00:26:36.050 --> 00:26:37.930 which was a randomized phase,  
NOTE Confidence: 0.832051396369934  
00:26:37.930 --> 00:26:40.938 two of oh Smyrna plus or minus bevacizumab,  
NOTE Confidence: 0.832051396369934

00:26:40.940 --> 00:26:42.444 again done in Japan.  
NOTE Confidence: 0.832051396369934

00:26:42.444 --> 00:26:44.700 And when you look at this,  
NOTE Confidence: 0.832051396369934

00:26:44.700 --> 00:26:46.950 the blue line is actually the  
NOTE Confidence: 0.832051396369934

00:26:46.950 --> 00:26:47.700 osimertinib alone.  
NOTE Confidence: 0.832051396369934

00:26:47.700 --> 00:26:49.580 So in this particular trial,  
NOTE Confidence: 0.832051396369934

00:26:49.580 --> 00:26:51.260 the combination of oh Summerton  
NOTE Confidence: 0.832051396369934

00:26:51.260 --> 00:26:53.462 Bevis is a map looked worse  
NOTE Confidence: 0.832051396369934

00:26:53.462 --> 00:26:55.286 for progression free survival.  
NOTE Confidence: 0.832051396369934

00:26:55.290 --> 00:26:57.000 Then just the ocean alone.  
NOTE Confidence: 0.832051396369934

00:26:57.000 --> 00:26:59.568 So that's a little bit confusing.  
NOTE Confidence: 0.832051396369934

00:26:59.570 --> 00:27:01.290 The ultimate number alone progression  
NOTE Confidence: 0.832051396369934

00:27:01.290 --> 00:27:03.590 free survival was lower than were well.  
NOTE Confidence: 0.832051396369934

00:27:03.590 --> 00:27:06.270 I should say this was done second line,  
NOTE Confidence: 0.832051396369934

00:27:06.270 --> 00:27:08.142 so this was for patients who  
NOTE Confidence: 0.832051396369934

00:27:08.142 --> 00:27:10.628 had or lot nip or just fitting.  
NOTE Confidence: 0.832051396369934

00:27:10.630 --> 00:27:12.305 It already had developed T790M

NOTE Confidence: 0.832051396369934  
00:27:12.305 --> 00:27:13.980 and then went on Osimertinib.  
NOTE Confidence: 0.832051396369934  
00:27:13.980 --> 00:27:16.660 So it's different than the first line data.  
NOTE Confidence: 0.832051396369934  
00:27:16.660 --> 00:27:19.549 But in this trial with no smart net plus  
NOTE Confidence: 0.832051396369934  
00:27:19.549 --> 00:27:22.706 or minus bevacizumab in the second line.  
NOTE Confidence: 0.832051396369934  
00:27:22.710 --> 00:27:24.365 The awesome art never alone  
NOTE Confidence: 0.832051396369934  
00:27:24.365 --> 00:27:25.358 outperformed the combination.  
NOTE Confidence: 0.832051396369934  
00:27:25.360 --> 00:27:28.008 Now this is a randomized phase two trial,  
NOTE Confidence: 0.832051396369934  
00:27:28.010 --> 00:27:29.990 so we have to be careful,  
NOTE Confidence: 0.832051396369934  
00:27:29.990 --> 00:27:31.314 sometimes randomized phase two  
NOTE Confidence: 0.832051396369934  
00:27:31.314 --> 00:27:33.300 studies don't give us the truth.  
NOTE Confidence: 0.832051396369934  
00:27:33.300 --> 00:27:35.298 This study did show that the  
NOTE Confidence: 0.832051396369934  
00:27:35.298 --> 00:27:37.011 response to the combination was  
NOTE Confidence: 0.832051396369934  
00:27:37.011 --> 00:27:38.596 higher than the single drug,  
NOTE Confidence: 0.832051396369934  
00:27:38.600 --> 00:27:40.255 but just not that progression  
NOTE Confidence: 0.832051396369934  
00:27:40.255 --> 00:27:41.248 free survival benefit.  
NOTE Confidence: 0.832051396369934

00:27:41.250 --> 00:27:43.890 So we're kind of confused by this result.

NOTE Confidence: 0.832051396369934

00:27:43.890 --> 00:27:46.123 We are moving forward with the next

NOTE Confidence: 0.832051396369934

00:27:46.123 --> 00:27:47.870 line of exploring this though,

NOTE Confidence: 0.832051396369934

00:27:47.870 --> 00:27:49.904 so this is a randomized phase

NOTE Confidence: 0.832051396369934

00:27:49.904 --> 00:27:51.636 study randomised three study in

NOTE Confidence: 0.832051396369934

00:27:51.636 --> 00:27:52.896 the Kaga Chrome network.

NOTE Confidence: 0.832051396369934

00:27:52.900 --> 00:27:55.175 Led by Helena, you and bless Hamas.

NOTE Confidence: 0.832051396369934

00:27:55.180 --> 00:27:57.130 And this is for patients who

NOTE Confidence: 0.832051396369934

00:27:57.130 --> 00:27:58.430 have just been diagnosed.

NOTE Confidence: 0.832051396369934

00:27:58.430 --> 00:28:01.030 So the one I just showed you with

NOTE Confidence: 0.832051396369934

00:28:01.030 --> 00:28:03.104 second line. This is first line.

NOTE Confidence: 0.832051396369934

00:28:03.104 --> 00:28:04.884 Patients just diagnosed with lung

NOTE Confidence: 0.832051396369934

00:28:04.884 --> 00:28:07.089 cancer that has an EGFR mutation and

NOTE Confidence: 0.832051396369934

00:28:07.089 --> 00:28:09.266 they're going to get oh smart nib

NOTE Confidence: 0.832051396369934

00:28:09.266 --> 00:28:11.429 plus or minus bevacizumab in the study.

NOTE Confidence: 0.832051396369934

00:28:11.430 --> 00:28:12.730 Just opened to enrollment,

NOTE Confidence: 0.832051396369934  
00:28:12.730 --> 00:28:14.680 so we have no data yet,  
NOTE Confidence: 0.832051396369934  
00:28:14.680 --> 00:28:16.300 but we're excited to participate,  
NOTE Confidence: 0.832051396369934  
00:28:16.300 --> 00:28:16.950 though again,  
NOTE Confidence: 0.832051396369934  
00:28:16.950 --> 00:28:19.550 as we talk about this option with patients,  
NOTE Confidence: 0.832051396369934  
00:28:19.550 --> 00:28:21.362 it will be important to talk  
NOTE Confidence: 0.832051396369934  
00:28:21.362 --> 00:28:22.570 about the data that  
NOTE Confidence: 0.822217047214508  
00:28:22.641 --> 00:28:23.838 we've already seen.  
NOTE Confidence: 0.822217047214508  
00:28:23.840 --> 00:28:25.886 With the other combinations of EGFR,  
NOTE Confidence: 0.822217047214508  
00:28:25.890 --> 00:28:28.626 TKI plus or minus a veg F drug,  
NOTE Confidence: 0.822217047214508  
00:28:28.630 --> 00:28:30.340 so we're still kind of  
NOTE Confidence: 0.822217047214508  
00:28:30.340 --> 00:28:31.708 trying to understand this,  
NOTE Confidence: 0.822217047214508  
00:28:31.710 --> 00:28:34.538 and there's also a no smart nib  
NOTE Confidence: 0.822217047214508  
00:28:34.538 --> 00:28:36.440 romanisti remap trial ongoing.  
NOTE Confidence: 0.822217047214508  
00:28:36.440 --> 00:28:40.016 OK, so leaving that and now on too,  
NOTE Confidence: 0.822217047214508  
00:28:40.020 --> 00:28:43.884 so hopefully you're following EGFR TK alone.  
NOTE Confidence: 0.822217047214508

00:28:43.890 --> 00:28:46.200 EGFR TK I plus or minus.  
NOTE Confidence: 0.822217047214508

00:28:46.200 --> 00:28:47.740 These anti angiogenesis drugs.  
NOTE Confidence: 0.822217047214508

00:28:47.740 --> 00:28:50.050 And now we're looking at Egypt,  
NOTE Confidence: 0.822217047214508

00:28:50.050 --> 00:28:52.360 far EGFR combinations and this is  
NOTE Confidence: 0.822217047214508

00:28:52.360 --> 00:28:54.574 where we're looking at, an EGFR,  
NOTE Confidence: 0.822217047214508

00:28:54.574 --> 00:28:56.933 TKI pill, plus an antibody drug that's  
NOTE Confidence: 0.822217047214508

00:28:56.933 --> 00:28:59.290 also hitting that EGFR approaching.  
NOTE Confidence: 0.822217047214508

00:28:59.290 --> 00:29:01.978 And if you think again about that first  
NOTE Confidence: 0.822217047214508

00:29:01.978 --> 00:29:05.000 slide I showed you or early on where  
NOTE Confidence: 0.822217047214508

00:29:05.000 --> 00:29:07.380 you've got the different strategies.  
NOTE Confidence: 0.822217047214508

00:29:07.380 --> 00:29:09.690 If you've got a receptor tyrosine  
NOTE Confidence: 0.822217047214508

00:29:09.690 --> 00:29:11.230 kinase inhibitor tyrosine kinase,  
NOTE Confidence: 0.822217047214508

00:29:11.230 --> 00:29:14.374 if you block at the tyrosine kinase domain.  
NOTE Confidence: 0.822217047214508

00:29:14.380 --> 00:29:16.596 But you also block at that receptor point.  
NOTE Confidence: 0.822217047214508

00:29:16.600 --> 00:29:18.808 You're hitting the same protein in two ways,  
NOTE Confidence: 0.822217047214508

00:29:18.810 --> 00:29:20.545 and so that's the theory

NOTE Confidence: 0.822217047214508  
00:29:20.545 --> 00:29:22.280 behind why this would work.  
NOTE Confidence: 0.822217047214508  
00:29:22.280 --> 00:29:23.534 And long ago.  
NOTE Confidence: 0.822217047214508  
00:29:23.534 --> 00:29:25.624 Before we had to simmer  
NOTE Confidence: 0.822217047214508  
00:29:25.624 --> 00:29:28.359 nib so going back in time.  
NOTE Confidence: 0.822217047214508  
00:29:28.360 --> 00:29:31.726 We had a combination of an EGFR pill drug  
NOTE Confidence: 0.822217047214508  
00:29:31.726 --> 00:29:34.198 afatinib plus in Egypt are antibody,  
NOTE Confidence: 0.822217047214508  
00:29:34.200 --> 00:29:35.092 so tux,  
NOTE Confidence: 0.822217047214508  
00:29:35.092 --> 00:29:38.214 omab and this combination was the first  
NOTE Confidence: 0.822217047214508  
00:29:38.214 --> 00:29:40.472 combination and the first thing we  
NOTE Confidence: 0.822217047214508  
00:29:40.472 --> 00:29:43.536 ever saw that worked in the setting of  
NOTE Confidence: 0.822217047214508  
00:29:43.536 --> 00:29:46.441 having been on a first generation drugs.  
NOTE Confidence: 0.822217047214508  
00:29:46.450 --> 00:29:47.294 Developing T790M,  
NOTE Confidence: 0.822217047214508  
00:29:47.294 --> 00:29:49.826 so before we add anything else,  
NOTE Confidence: 0.822217047214508  
00:29:49.830 --> 00:29:52.225 this combination worked and so  
NOTE Confidence: 0.822217047214508  
00:29:52.225 --> 00:29:54.620 this was the original publication.  
NOTE Confidence: 0.822217047214508



00:29:54.620 --> 00:29:55.168 And again,  
NOTE Confidence: 0.822217047214508

00:29:55.168 --> 00:29:56.538 this is a waterfall plot,  
NOTE Confidence: 0.822217047214508

00:29:56.540 --> 00:29:58.458 so you see a few patients had  
NOTE Confidence: 0.822217047214508

00:29:58.458 --> 00:29:59.280 there's tumors grow,  
NOTE Confidence: 0.822217047214508

00:29:59.280 --> 00:30:00.918 but a lot of patients had  
NOTE Confidence: 0.822217047214508

00:30:00.918 --> 00:30:01.737 their tumors shrink,  
NOTE Confidence: 0.822217047214508

00:30:01.740 --> 00:30:03.252 and so this was an option  
NOTE Confidence: 0.822217047214508

00:30:03.252 --> 00:30:04.760 that we had for awhile.  
NOTE Confidence: 0.822217047214508

00:30:04.760 --> 00:30:07.500 But now we don't use it too much because of,  
NOTE Confidence: 0.822217047214508

00:30:07.500 --> 00:30:08.184 oh, Smyrna,  
NOTE Confidence: 0.822217047214508

00:30:08.184 --> 00:30:10.578 but we're coming back to study it.  
NOTE Confidence: 0.822217047214508

00:30:10.580 --> 00:30:12.480 And so there are combinations.  
NOTE Confidence: 0.822217047214508

00:30:12.480 --> 00:30:13.845 Nauvo summer nib.  
NOTE Confidence: 0.822217047214508

00:30:13.845 --> 00:30:15.665 Plus and different Egypt  
NOTE Confidence: 0.822217047214508

00:30:15.665 --> 00:30:17.030 for antibody necitumumab.  
NOTE Confidence: 0.822217047214508

00:30:17.030 --> 00:30:19.774 So we are part of this California

NOTE Confidence: 0.822217047214508  
00:30:19.774 --> 00:30:20.950 Cancer Consortium study.  
NOTE Confidence: 0.822217047214508  
00:30:20.950 --> 00:30:22.830 Jonathan Rhys has talked about  
NOTE Confidence: 0.822217047214508  
00:30:22.830 --> 00:30:25.185 some of the preliminary data at  
NOTE Confidence: 0.822217047214508  
00:30:25.185 --> 00:30:27.597 ASCO last year and more ongoing  
NOTE Confidence: 0.822217047214508  
00:30:27.597 --> 00:30:29.190 show encouraging information here,  
NOTE Confidence: 0.822217047214508  
00:30:29.190 --> 00:30:31.899 and this is being looked at for  
NOTE Confidence: 0.822217047214508  
00:30:31.899 --> 00:30:34.754 patients who have already been on oh  
NOTE Confidence: 0.822217047214508  
00:30:34.754 --> 00:30:38.200 smart nib and it stopped working or early on.  
NOTE Confidence: 0.822217047214508  
00:30:38.200 --> 00:30:40.250 There also combinations with afatinib  
NOTE Confidence: 0.822217047214508  
00:30:40.250 --> 00:30:42.708 and necitumumab and were part of  
NOTE Confidence: 0.822217047214508  
00:30:42.708 --> 00:30:44.446 that consortium which is, uh.  
NOTE Confidence: 0.822217047214508  
00:30:44.446 --> 00:30:44.812 Vanderbilt,  
NOTE Confidence: 0.822217047214508  
00:30:44.812 --> 00:30:48.190 so a lot of work still looking at this,  
NOTE Confidence: 0.822217047214508  
00:30:48.190 --> 00:30:50.344 but some toxicity issues so we'll  
NOTE Confidence: 0.822217047214508  
00:30:50.344 --> 00:30:52.559 see how that pans out there.  
NOTE Confidence: 0.822217047214508

00:30:52.560 --> 00:30:52.924 Also,  
NOTE Confidence: 0.822217047214508  
00:30:52.924 --> 00:30:54.744 newer drugs being developed at  
NOTE Confidence: 0.822217047214508  
00:30:54.744 --> 00:30:57.157 build on this so one is this  
NOTE Confidence: 0.822217047214508  
00:30:57.157 --> 00:30:58.927 aim of antonyms drug which is  
NOTE Confidence: 0.822217047214508  
00:30:58.927 --> 00:31:01.289 a combination of EGFR antibody.  
NOTE Confidence: 0.822217047214508  
00:31:01.290 --> 00:31:02.602 It's also hitting met,  
NOTE Confidence: 0.822217047214508  
00:31:02.602 --> 00:31:05.300 so if you were paying close attention,  
NOTE Confidence: 0.822217047214508  
00:31:05.300 --> 00:31:07.484 you'll notice I mentioned met as  
NOTE Confidence: 0.822217047214508  
00:31:07.484 --> 00:31:08.940 a potential resistance mechanism,  
NOTE Confidence: 0.822217047214508  
00:31:08.940 --> 00:31:11.118 and so there's data to support  
NOTE Confidence: 0.822217047214508  
00:31:11.118 --> 00:31:12.207 looking at met.  
NOTE Confidence: 0.822217047214508  
00:31:12.210 --> 00:31:14.548 There have been a lot of trials  
NOTE Confidence: 0.822217047214508  
00:31:14.548 --> 00:31:16.599 looking at specific met inhibitors.  
NOTE Confidence: 0.822217047214508  
00:31:16.600 --> 00:31:18.526 In the Egypt Far world again,  
NOTE Confidence: 0.822217047214508  
00:31:18.530 --> 00:31:20.140 I only have an hour,  
NOTE Confidence: 0.822217047214508  
00:31:20.140 --> 00:31:22.716 so I couldn't go into all of that.

NOTE Confidence: 0.822217047214508  
00:31:22.720 --> 00:31:24.967 They haven't really gone too far yet.  
NOTE Confidence: 0.822217047214508  
00:31:24.970 --> 00:31:26.580 We haven't changed our treatment,  
NOTE Confidence: 0.822217047214508  
00:31:26.580 --> 00:31:28.506 but we haven't forgotten about that.  
NOTE Confidence: 0.817905068397522  
00:31:28.510 --> 00:31:30.120 So we're looking at Egypt.  
NOTE Confidence: 0.817905068397522  
00:31:30.120 --> 00:31:31.101 Are met antibody,  
NOTE Confidence: 0.817905068397522  
00:31:31.101 --> 00:31:33.063 hear them if antonym in combination  
NOTE Confidence: 0.817905068397522  
00:31:33.063 --> 00:31:34.754 with the different third generation  
NOTE Confidence: 0.817905068397522  
00:31:34.754 --> 00:31:37.068 drug lizard nip and to this was  
NOTE Confidence: 0.817905068397522  
00:31:37.068 --> 00:31:39.140 dated that was just presented at Asmo,  
NOTE Confidence: 0.817905068397522  
00:31:39.140 --> 00:31:40.133 which was encouraging,  
NOTE Confidence: 0.817905068397522  
00:31:40.133 --> 00:31:42.450 showing that for patients who had already  
NOTE Confidence: 0.817905068397522  
00:31:42.510 --> 00:31:43.985 had osimertinib in this preliminary  
NOTE Confidence: 0.817905068397522  
00:31:43.985 --> 00:31:46.176 data about a third of those patients  
NOTE Confidence: 0.817905068397522  
00:31:46.176 --> 00:31:48.156 did respond to this new combination.  
NOTE Confidence: 0.817905068397522  
00:31:48.160 --> 00:31:50.505 So we'll see how that pans out.  
NOTE Confidence: 0.817905068397522

00:31:50.510 --> 00:31:51.858 How long it works,  
NOTE Confidence: 0.817905068397522

00:31:51.858 --> 00:31:53.880 what the toxicity is show there's  
NOTE Confidence: 0.817905068397522

00:31:53.950 --> 00:31:56.180 there is movement in excitement  
NOTE Confidence: 0.817905068397522

00:31:56.180 --> 00:31:57.518 about new combinations.  
NOTE Confidence: 0.817905068397522

00:31:57.520 --> 00:31:59.585 There are also newer EGFR  
NOTE Confidence: 0.817905068397522

00:31:59.585 --> 00:32:02.520 pathway or this is the new drug.  
NOTE Confidence: 0.817905068397522

00:32:02.520 --> 00:32:04.866 Use U Three 1402 or projection  
NOTE Confidence: 0.817905068397522

00:32:04.866 --> 00:32:07.312 map directed hand and this drug  
NOTE Confidence: 0.817905068397522

00:32:07.312 --> 00:32:09.706 is looking at her three and  
NOTE Confidence: 0.817905068397522

00:32:09.706 --> 00:32:11.939 you're confused now because you  
NOTE Confidence: 0.817905068397522

00:32:11.939 --> 00:32:14.199 think you're talking about EGFR.  
NOTE Confidence: 0.817905068397522

00:32:14.200 --> 00:32:16.696 Why, you talking bout her three?  
NOTE Confidence: 0.817905068397522

00:32:16.700 --> 00:32:19.619 Well, EGFR is also called her one,  
NOTE Confidence: 0.817905068397522

00:32:19.620 --> 00:32:22.588 so her one an heard too and her  
NOTE Confidence: 0.817905068397522

00:32:22.588 --> 00:32:26.025 three are all in the same family and  
NOTE Confidence: 0.817905068397522

00:32:26.025 --> 00:32:28.849 they do interact with each other.

NOTE Confidence: 0.817905068397522  
00:32:28.850 --> 00:32:31.040 Show this antibody drug conjugate  
NOTE Confidence: 0.817905068397522  
00:32:31.040 --> 00:32:33.676 that's focused on her three there's  
NOTE Confidence: 0.817905068397522  
00:32:33.676 --> 00:32:36.287 hope and some data now showing that  
NOTE Confidence: 0.817905068397522  
00:32:36.287 --> 00:32:39.085 it could be active in the setting  
NOTE Confidence: 0.817905068397522  
00:32:39.085 --> 00:32:41.060 where there's Egypt far drive.  
NOTE Confidence: 0.817905068397522  
00:32:41.060 --> 00:32:43.909 Sorry, each of our driven lung cancer,  
NOTE Confidence: 0.817905068397522  
00:32:43.910 --> 00:32:46.458 so this is again some very preliminary  
NOTE Confidence: 0.817905068397522  
00:32:46.458 --> 00:32:49.128 data where they were looking at patients  
NOTE Confidence: 0.817905068397522  
00:32:49.128 --> 00:32:51.930 who had EGFR mutant lung cancer had  
NOTE Confidence: 0.817905068397522  
00:32:51.930 --> 00:32:53.790 previously received osimertinib or  
NOTE Confidence: 0.817905068397522  
00:32:53.790 --> 00:32:57.341 had developed resistance to or lot in a  
NOTE Confidence: 0.817905068397522  
00:32:57.341 --> 00:33:00.190 bridge of fitness and didn't have T790M.  
NOTE Confidence: 0.817905068397522  
00:33:00.190 --> 00:33:03.853 And again on this waterfall plot you can see.  
NOTE Confidence: 0.817905068397522  
00:33:03.860 --> 00:33:05.918 That there have definitely been some  
NOTE Confidence: 0.817905068397522  
00:33:05.918 --> 00:33:08.180 responses and the details here all about.  
NOTE Confidence: 0.817905068397522

00:33:08.180 --> 00:33:10.166 Well, what was the resistance mechanism?  
NOTE Confidence: 0.817905068397522

00:33:10.170 --> 00:33:12.487 What was the underlying you do fermentation?  
NOTE Confidence: 0.817905068397522

00:33:12.490 --> 00:33:13.714 What resistance was seen?  
NOTE Confidence: 0.817905068397522

00:33:13.714 --> 00:33:16.808 And so there's a lot to parse through here,  
NOTE Confidence: 0.817905068397522

00:33:16.810 --> 00:33:18.470 which I won't go into.  
NOTE Confidence: 0.817905068397522

00:33:18.470 --> 00:33:20.850 But encouraging new data.  
NOTE Confidence: 0.817905068397522

00:33:20.850 --> 00:33:21.196 OK.  
NOTE Confidence: 0.817905068397522

00:33:21.196 --> 00:33:24.310 So now we talked about Egypt Party K eyes  
NOTE Confidence: 0.817905068397522

00:33:24.393 --> 00:33:27.315 alone veg F novelly Jeff combinations.  
NOTE Confidence: 0.817905068397522

00:33:27.320 --> 00:33:29.784 And now I'm going to switch to chemo  
NOTE Confidence: 0.817905068397522

00:33:29.784 --> 00:33:31.952 and talk about Egypt, Kaizen, chemo.  
NOTE Confidence: 0.817905068397522

00:33:31.952 --> 00:33:33.938 So again, bear with me here.  
NOTE Confidence: 0.817905068397522

00:33:33.940 --> 00:33:36.910 This is a it's a lot to go through,  
NOTE Confidence: 0.817905068397522

00:33:36.910 --> 00:33:39.101 but there's been so much we've been  
NOTE Confidence: 0.817905068397522

00:33:39.101 --> 00:33:40.889 exploring and trying to understand.  
NOTE Confidence: 0.817905068397522

00:33:40.890 --> 00:33:43.590 How do we do a better job of treating

NOTE Confidence: 0.817905068397522  
00:33:43.590 --> 00:33:45.847 patients with EGFR mutant lung cancer?  
NOTE Confidence: 0.817905068397522  
00:33:45.850 --> 00:33:47.510 So what about combining chemotherapy?  
NOTE Confidence: 0.817905068397522  
00:33:47.510 --> 00:33:49.160 Need you 40K as well?  
NOTE Confidence: 0.817905068397522  
00:33:49.160 --> 00:33:51.808 When we first learned about the EGFR Tkis,  
NOTE Confidence: 0.817905068397522  
00:33:51.810 --> 00:33:53.062 there were big trials.  
NOTE Confidence: 0.817905068397522  
00:33:53.062 --> 00:33:54.940 Combining them with chemo misses the  
NOTE Confidence: 0.817905068397522  
00:33:54.996 --> 00:33:56.958 tribute and talent studies and again,  
NOTE Confidence: 0.817905068397522  
00:33:56.960 --> 00:33:59.496 Doctor Herbs played a big role in these.  
NOTE Confidence: 0.817905068397522  
00:33:59.500 --> 00:34:01.250 And these studies were completely,  
NOTE Confidence: 0.817905068397522  
00:34:01.250 --> 00:34:01.938 absolutely negative,  
NOTE Confidence: 0.817905068397522  
00:34:01.938 --> 00:34:04.346 and this was done before we knew  
NOTE Confidence: 0.817905068397522  
00:34:04.346 --> 00:34:06.150 about EGFR mutant lung cancer.  
NOTE Confidence: 0.817905068397522  
00:34:06.150 --> 00:34:08.250 We were treating everybody the same,  
NOTE Confidence: 0.817905068397522  
00:34:08.250 --> 00:34:09.534 but totally negative studies.  
NOTE Confidence: 0.817905068397522  
00:34:09.534 --> 00:34:12.282 And so this let us to not really  
NOTE Confidence: 0.817905068397522



00:34:12.282 --> 00:34:14.550 think about this approach for awhile.

NOTE Confidence: 0.817905068397522

00:34:14.550 --> 00:34:16.300 There was some work looking

NOTE Confidence: 0.817905068397522

00:34:16.300 --> 00:34:17.700 at this intercalation idea,

NOTE Confidence: 0.817905068397522

00:34:17.700 --> 00:34:20.150 where you would use the Jaffar TK.

NOTE Confidence: 0.817905068397522

00:34:20.150 --> 00:34:22.950 I stop it, get the cell signaling again,

NOTE Confidence: 0.817905068397522

00:34:22.950 --> 00:34:23.958 give the chemo,

NOTE Confidence: 0.817905068397522

00:34:23.958 --> 00:34:25.974 restart the EGFR TKI and this

NOTE Confidence: 0.817905068397522

00:34:25.974 --> 00:34:27.500 actually was encourage ING.

NOTE Confidence: 0.817905068397522

00:34:27.500 --> 00:34:29.648 It showed an overall survival benefit.

NOTE Confidence: 0.817905068397522

00:34:29.650 --> 00:34:31.185 But people don't really want

NOTE Confidence: 0.817905068397522

00:34:31.185 --> 00:34:32.720 to be on chemo if

NOTE Confidence: 0.870585560798645

00:34:32.795 --> 00:34:34.804 they can just take a pill and

NOTE Confidence: 0.870585560798645

00:34:34.804 --> 00:34:37.008 said this was not widely adopted.

NOTE Confidence: 0.870585560798645

00:34:37.010 --> 00:34:38.954 People looked at whether when you

NOTE Confidence: 0.870585560798645

00:34:38.954 --> 00:34:41.064 were on a first generation EGFR

NOTE Confidence: 0.870585560798645

00:34:41.064 --> 00:34:43.290 drug and it stopped working and

NOTE Confidence: 0.870585560798645  
00:34:43.290 --> 00:34:45.489 you were going to go to chemo.  
NOTE Confidence: 0.870585560798645  
00:34:45.490 --> 00:34:47.180 This was before Osama Rname.  
NOTE Confidence: 0.870585560798645  
00:34:47.180 --> 00:34:49.546 Whether you could continue the EGFR drug,  
NOTE Confidence: 0.870585560798645  
00:34:49.550 --> 00:34:51.590 or if you should stop it.  
NOTE Confidence: 0.870585560798645  
00:34:51.590 --> 00:34:53.534 And this was the impressed trial  
NOTE Confidence: 0.870585560798645  
00:34:53.534 --> 00:34:55.320 and that didn't work either.  
NOTE Confidence: 0.870585560798645  
00:34:55.320 --> 00:34:57.686 There was no benefit an if anything.  
NOTE Confidence: 0.870585560798645  
00:34:57.690 --> 00:34:59.370 Survival favored stopping that Jeff  
NOTE Confidence: 0.870585560798645  
00:34:59.370 --> 00:35:01.759 it nib and just going with chemo.  
NOTE Confidence: 0.870585560798645  
00:35:01.760 --> 00:35:03.344 So we had these.  
NOTE Confidence: 0.870585560798645  
00:35:03.344 --> 00:35:05.324 Big randomized trials combinations negative.  
NOTE Confidence: 0.870585560798645  
00:35:05.330 --> 00:35:06.990 We had this trial negative.  
NOTE Confidence: 0.870585560798645  
00:35:06.990 --> 00:35:08.985 If you combine the EGFR TK I  
NOTE Confidence: 0.870585560798645  
00:35:08.985 --> 00:35:11.167 in the chemo together so not a  
NOTE Confidence: 0.870585560798645  
00:35:11.167 --> 00:35:13.502 lot of enthusiasm but a lot of  
NOTE Confidence: 0.870585560798645

00:35:13.502 --> 00:35:15.417 questions still because the idea  
NOTE Confidence: 0.870585560798645

00:35:15.417 --> 00:35:18.000 of stopping in EGFR TKI for tumor  
NOTE Confidence: 0.870585560798645

00:35:18.000 --> 00:35:20.100 that was dependent on it doesn't  
NOTE Confidence: 0.870585560798645

00:35:20.100 --> 00:35:22.585 make a lot of sense to many people,  
NOTE Confidence: 0.870585560798645

00:35:22.590 --> 00:35:25.656 and so lots of debate on this.  
NOTE Confidence: 0.870585560798645

00:35:25.660 --> 00:35:27.935 And then we had two trials that  
NOTE Confidence: 0.870585560798645

00:35:27.935 --> 00:35:29.969 came out which changed again,  
NOTE Confidence: 0.870585560798645

00:35:29.970 --> 00:35:32.476 the way that we think about this.  
NOTE Confidence: 0.870585560798645

00:35:32.480 --> 00:35:35.344 Should this was a trial done in Japan,  
NOTE Confidence: 0.870585560798645

00:35:35.350 --> 00:35:35.787 chemotherapy.  
NOTE Confidence: 0.870585560798645

00:35:35.787 --> 00:35:38.846 Within Egypt Artique I so this was  
NOTE Confidence: 0.870585560798645

00:35:38.846 --> 00:35:41.430 in patients who are newly diagnosed  
NOTE Confidence: 0.870585560798645

00:35:41.430 --> 00:35:43.878 EGFR mutant lung cancer and they  
NOTE Confidence: 0.870585560798645

00:35:43.955 --> 00:35:46.579 either got the EGFR drugs if it new.  
NOTE Confidence: 0.870585560798645

00:35:46.580 --> 00:35:49.136 Or they got to fit in it plus chemo.  
NOTE Confidence: 0.870585560798645

00:35:49.140 --> 00:35:51.114 If they got your fitness plus chemo,

NOTE Confidence: 0.870585560798645  
00:35:51.120 --> 00:35:52.445 they stayed on maintenance and  
NOTE Confidence: 0.870585560798645  
00:35:52.445 --> 00:35:54.230 at the time it stopped working.  
NOTE Confidence: 0.870585560798645  
00:35:54.230 --> 00:35:55.928 They went on to other therapy.  
NOTE Confidence: 0.870585560798645  
00:35:55.930 --> 00:35:57.628 If they got ripped fitness alone  
NOTE Confidence: 0.870585560798645  
00:35:57.628 --> 00:35:58.760 when it stopped working,  
NOTE Confidence: 0.870585560798645  
00:35:58.760 --> 00:36:00.734 they stopped it and went to chemo.  
NOTE Confidence: 0.870585560798645  
00:36:00.740 --> 00:36:02.160 So it's sort of a.  
NOTE Confidence: 0.870585560798645  
00:36:02.160 --> 00:36:03.292 You get everything together.  
NOTE Confidence: 0.870585560798645  
00:36:03.292 --> 00:36:04.707 The chemo plus that huge.  
NOTE Confidence: 0.870585560798645  
00:36:04.710 --> 00:36:06.966 If our drug or you get it sequentially,  
NOTE Confidence: 0.870585560798645  
00:36:06.970 --> 00:36:08.610 EGFR and then chemo.  
NOTE Confidence: 0.870585560798645  
00:36:08.610 --> 00:36:10.178 Again, no summerton period.  
NOTE Confidence: 0.870585560798645  
00:36:10.178 --> 00:36:12.108 This was designed before there  
NOTE Confidence: 0.870585560798645  
00:36:12.108 --> 00:36:13.619 was oh so Barnum.  
NOTE Confidence: 0.870585560798645  
00:36:13.620 --> 00:36:16.668 An when you think about this was the.  
NOTE Confidence: 0.870585560798645

00:36:16.670 --> 00:36:18.358 First progression free survival.  
NOTE Confidence: 0.870585560798645

00:36:18.358 --> 00:36:20.890 So this was for patients who  
NOTE Confidence: 0.870585560798645

00:36:20.968 --> 00:36:22.768 had chemo plus to fit nib.  
NOTE Confidence: 0.870585560798645

00:36:22.770 --> 00:36:25.122 Versus Jeff it Nip and the chemo plus  
NOTE Confidence: 0.870585560798645

00:36:25.122 --> 00:36:27.647 your fitness group stayed on the drug longer.  
NOTE Confidence: 0.870585560798645

00:36:27.650 --> 00:36:29.610 It was they were still on it  
NOTE Confidence: 0.870585560798645

00:36:29.610 --> 00:36:31.010 for like 21 months.  
NOTE Confidence: 0.870585560798645

00:36:31.010 --> 00:36:32.840 The group only get into fitting.  
NOTE Confidence: 0.870585560798645

00:36:32.840 --> 00:36:34.670 It only worked about 11 months.  
NOTE Confidence: 0.870585560798645

00:36:34.670 --> 00:36:35.118 You like?  
NOTE Confidence: 0.870585560798645

00:36:35.118 --> 00:36:36.910 OK right but what you really want to  
NOTE Confidence: 0.870585560798645

00:36:36.966 --> 00:36:38.796 know is everybody everything together  
NOTE Confidence: 0.870585560798645

00:36:38.796 --> 00:36:40.626 concurrent versus sequential and when  
NOTE Confidence: 0.870585560798645

00:36:40.678 --> 00:36:42.288 you looked at everybody together,  
NOTE Confidence: 0.870585560798645

00:36:42.290 --> 00:36:43.283 concurrent versus sequential,  
NOTE Confidence: 0.870585560798645

00:36:43.283 --> 00:36:45.600 the sequential group cut up when they

NOTE Confidence: 0.870585560798645  
00:36:45.651 --> 00:36:47.478 went from there driftng it to chemo.  
NOTE Confidence: 0.870585560798645  
00:36:47.480 --> 00:36:49.629 It all ended up being the same  
NOTE Confidence: 0.870585560798645  
00:36:49.629 --> 00:36:51.582 and you think OK, negative study.  
NOTE Confidence: 0.870585560798645  
00:36:51.582 --> 00:36:53.086 Except overall survival actually  
NOTE Confidence: 0.870585560798645  
00:36:53.086 --> 00:36:55.427 showed a benefit to having gotten  
NOTE Confidence: 0.870585560798645  
00:36:55.427 --> 00:36:56.975 everything at the beginning,  
NOTE Confidence: 0.870585560798645  
00:36:56.980 --> 00:36:59.844 so this has this a little bit confused.  
NOTE Confidence: 0.870585560798645  
00:36:59.850 --> 00:37:02.742 Why would getting everything at the  
NOTE Confidence: 0.870585560798645  
00:37:02.742 --> 00:37:06.118 beginning be better than the A and then B?  
NOTE Confidence: 0.870585560798645  
00:37:06.120 --> 00:37:07.180 If the progression free  
NOTE Confidence: 0.870585560798645  
00:37:07.180 --> 00:37:08.240 Survival's were the same,  
NOTE Confidence: 0.870585560798645  
00:37:08.240 --> 00:37:10.360 so we're still trying to figure this out,  
NOTE Confidence: 0.870585560798645  
00:37:10.360 --> 00:37:11.965 but there was another study  
NOTE Confidence: 0.870585560798645  
00:37:11.965 --> 00:37:13.570 that was done in India.  
NOTE Confidence: 0.870585560798645  
00:37:13.570 --> 00:37:14.290 Similar design.  
NOTE Confidence: 0.870585560798645

00:37:14.290 --> 00:37:16.090 That also showed that there  
NOTE Confidence: 0.870585560798645

00:37:16.090 --> 00:37:17.962 was a progression free and  
NOTE Confidence: 0.870585560798645

00:37:17.962 --> 00:37:19.418 an overall survival benefit.  
NOTE Confidence: 0.870585560798645

00:37:19.420 --> 00:37:21.082 This is a little bit different  
NOTE Confidence: 0.870585560798645

00:37:21.082 --> 00:37:22.190 'cause not everybody who  
NOTE Confidence: 0.838739812374115

00:37:22.241 --> 00:37:23.666 started on Jefit and I've  
NOTE Confidence: 0.838739812374115

00:37:23.666 --> 00:37:24.806 got the chemo afterwards,  
NOTE Confidence: 0.838739812374115

00:37:24.810 --> 00:37:26.520 but it kind of supports that,  
NOTE Confidence: 0.838739812374115

00:37:26.520 --> 00:37:27.940 and so they're ongoing trials.  
NOTE Confidence: 0.838739812374115

00:37:27.940 --> 00:37:29.452 Now looking at this question and  
NOTE Confidence: 0.838739812374115

00:37:29.452 --> 00:37:31.060 including a study with Osimertinib,  
NOTE Confidence: 0.838739812374115

00:37:31.060 --> 00:37:33.797 so we'll see how this pans out.  
NOTE Confidence: 0.838739812374115

00:37:33.800 --> 00:37:35.676 And now I'm going to shift gears  
NOTE Confidence: 0.838739812374115

00:37:35.676 --> 00:37:38.075 again and go to immune therapy because  
NOTE Confidence: 0.838739812374115

00:37:38.075 --> 00:37:39.985 that's the other big revolution  
NOTE Confidence: 0.838739812374115

00:37:39.985 --> 00:37:42.217 that's happened in the last 15 years,

NOTE Confidence: 0.838739812374115  
00:37:42.220 --> 00:37:43.840 but it hasn't changed each  
NOTE Confidence: 0.838739812374115  
00:37:43.840 --> 00:37:45.460 of our lung cancer much.  
NOTE Confidence: 0.838739812374115  
00:37:45.460 --> 00:37:47.497 When we look at the first trials  
NOTE Confidence: 0.838739812374115  
00:37:47.497 --> 00:37:49.350 that got immune therapies with,  
NOTE Confidence: 0.838739812374115  
00:37:49.350 --> 00:37:51.974 these are the PD One PD L1 checkpoint  
NOTE Confidence: 0.838739812374115  
00:37:51.974 --> 00:37:53.559 inhibitors approved in lung cancer.  
NOTE Confidence: 0.838739812374115  
00:37:53.560 --> 00:37:55.834 They were given second line to  
NOTE Confidence: 0.838739812374115  
00:37:55.834 --> 00:37:58.140 people who had already had chemo.  
NOTE Confidence: 0.838739812374115  
00:37:58.140 --> 00:37:59.940 Some of whom were Egypt Farhadi,  
NOTE Confidence: 0.838739812374115  
00:37:59.940 --> 00:38:02.292 Jaffar lung cancer, and it already  
NOTE Confidence: 0.838739812374115  
00:38:02.292 --> 00:38:04.420 had Egypt farland treatments as well.  
NOTE Confidence: 0.838739812374115  
00:38:04.420 --> 00:38:06.170 They were the only subgroup that didn't  
NOTE Confidence: 0.838739812374115  
00:38:06.170 --> 00:38:08.178 do well with the checkpoint inhibitor,  
NOTE Confidence: 0.838739812374115  
00:38:08.180 --> 00:38:10.166 so in these older trials and  
NOTE Confidence: 0.838739812374115  
00:38:10.166 --> 00:38:12.179 I'm looking here at this box.  
NOTE Confidence: 0.838739812374115



00:38:12.180 --> 00:38:13.922 Of docetaxel,  
NOTE Confidence: 0.838739812374115

00:38:13.922 --> 00:38:17.406 chemo versus checkpoint inhibitors.  
NOTE Confidence: 0.838739812374115

00:38:17.410 --> 00:38:18.710 Those trials showed overall  
NOTE Confidence: 0.838739812374115

00:38:18.710 --> 00:38:20.010 survival benefits to everybody.  
NOTE Confidence: 0.838739812374115

00:38:20.010 --> 00:38:21.310 With the checkpoint inhibitors,  
NOTE Confidence: 0.838739812374115

00:38:21.310 --> 00:38:23.260 except patients who had EGFR mutations.  
NOTE Confidence: 0.838739812374115

00:38:23.260 --> 00:38:25.465 So when we got to the bigger  
NOTE Confidence: 0.838739812374115

00:38:25.465 --> 00:38:26.840 trials in first line,  
NOTE Confidence: 0.838739812374115

00:38:26.840 --> 00:38:28.136 patients with EGFR mutations  
NOTE Confidence: 0.838739812374115

00:38:28.136 --> 00:38:29.756 weren't included on those trials,  
NOTE Confidence: 0.838739812374115

00:38:29.760 --> 00:38:31.710 so we have very little data.  
NOTE Confidence: 0.838739812374115

00:38:31.710 --> 00:38:33.660 This one study that came out  
NOTE Confidence: 0.838739812374115

00:38:33.660 --> 00:38:34.960 of the Atlantic trial,  
NOTE Confidence: 0.838739812374115

00:38:34.960 --> 00:38:36.910 which was a phase two study,  
NOTE Confidence: 0.838739812374115

00:38:36.910 --> 00:38:39.638 showed that if you had a Jaffar mutant  
NOTE Confidence: 0.838739812374115

00:38:39.638 --> 00:38:42.436 lung cancer and your PD L1 level was high,

NOTE Confidence: 0.838739812374115  
00:38:42.440 --> 00:38:43.736 sometimes the checkpoint inhibitors  
NOTE Confidence: 0.838739812374115  
00:38:43.736 --> 00:38:45.685 worked about 12% of the time.  
NOTE Confidence: 0.838739812374115  
00:38:45.685 --> 00:38:47.310 But if you had low,  
NOTE Confidence: 0.838739812374115  
00:38:47.310 --> 00:38:49.338 any different mutation, it never worked.  
NOTE Confidence: 0.838739812374115  
00:38:49.340 --> 00:38:50.920 People have done TK.  
NOTE Confidence: 0.838739812374115  
00:38:50.920 --> 00:38:52.500 I plus immunotherapy combinations.  
NOTE Confidence: 0.838739812374115  
00:38:52.500 --> 00:38:54.480 And they've been totally negative.  
NOTE Confidence: 0.838739812374115  
00:38:54.480 --> 00:38:58.248 Alot of Texas city. No clear benefit so.  
NOTE Confidence: 0.838739812374115  
00:38:58.250 --> 00:39:00.374 We don't get too enthusiastic about  
NOTE Confidence: 0.838739812374115  
00:39:00.374 --> 00:39:01.790 checkpoint inhibitors in EGFR,  
NOTE Confidence: 0.838739812374115  
00:39:01.790 --> 00:39:03.560 but we think about it.  
NOTE Confidence: 0.838739812374115  
00:39:03.560 --> 00:39:04.760 There was one trial.  
NOTE Confidence: 0.838739812374115  
00:39:04.760 --> 00:39:07.011 This empower 150 study that was chemo  
NOTE Confidence: 0.838739812374115  
00:39:07.011 --> 00:39:08.971 plus bevacizumab plus immune therapy  
NOTE Confidence: 0.838739812374115  
00:39:08.971 --> 00:39:11.316 that allowed for patients with EGFR  
NOTE Confidence: 0.838739812374115

00:39:11.316 --> 00:39:13.458 mutations and that study did show  
NOTE Confidence: 0.838739812374115

00:39:13.458 --> 00:39:15.604 potential survival benefit in the subset,  
NOTE Confidence: 0.838739812374115

00:39:15.604 --> 00:39:18.588 but we have to be really careful because  
NOTE Confidence: 0.838739812374115

00:39:18.588 --> 00:39:22.210 this was a small subset of a bigger study.  
NOTE Confidence: 0.838739812374115

00:39:22.210 --> 00:39:23.745 It wasn't really powered to  
NOTE Confidence: 0.838739812374115

00:39:23.745 --> 00:39:24.973 answer the specific question,  
NOTE Confidence: 0.838739812374115

00:39:24.980 --> 00:39:26.520 and so their ongoing trials.  
NOTE Confidence: 0.838739812374115

00:39:26.520 --> 00:39:28.368 Now looking at this so we  
NOTE Confidence: 0.838739812374115

00:39:28.368 --> 00:39:29.600 still have questions around.  
NOTE Confidence: 0.838739812374115

00:39:29.600 --> 00:39:31.693 What do we do with immune therapy  
NOTE Confidence: 0.838739812374115

00:39:31.693 --> 00:39:33.909 in the setting of EGFR lung cancer?  
NOTE Confidence: 0.838739812374115

00:39:33.910 --> 00:39:35.758 So to put all that together,  
NOTE Confidence: 0.838739812374115

00:39:35.760 --> 00:39:37.415 each of Arcgis improved response  
NOTE Confidence: 0.838739812374115

00:39:37.415 --> 00:39:39.070 rate and progression free survival  
NOTE Confidence: 0.838739812374115

00:39:39.127 --> 00:39:40.907 compared to first line chemotherapy.  
NOTE Confidence: 0.838739812374115

00:39:40.910 --> 00:39:42.240 But you have to test.

NOTE Confidence: 0.838739812374115  
00:39:42.240 --> 00:39:43.824 You have to know the Jaffar  
NOTE Confidence: 0.838739812374115  
00:39:43.824 --> 00:39:44.616 mutation is there.  
NOTE Confidence: 0.838739812374115  
00:39:44.620 --> 00:39:46.210 Oh, summer at numbers are preferred.  
NOTE Confidence: 0.838739812374115  
00:39:46.210 --> 00:39:48.866 First line treatment from the floor of trial.  
NOTE Confidence: 0.838739812374115  
00:39:48.870 --> 00:39:50.860 Veg F inhibition improves response  
NOTE Confidence: 0.838739812374115  
00:39:50.860 --> 00:39:52.452 and progression free survival  
NOTE Confidence: 0.838739812374115  
00:39:52.452 --> 00:39:54.120 when added DJ fourty keys.  
NOTE Confidence: 0.838739812374115  
00:39:54.120 --> 00:39:56.724 But we don't know if it  
NOTE Confidence: 0.838739812374115  
00:39:56.724 --> 00:39:58.026 improves overall survival.  
NOTE Confidence: 0.838739812374115  
00:39:58.030 --> 00:39:59.955 Chemotherapy may improve overall survival  
NOTE Confidence: 0.838739812374115  
00:39:59.955 --> 00:40:02.220 in combination with EGFR TK eyes,  
NOTE Confidence: 0.838739812374115  
00:40:02.220 --> 00:40:04.485 but we're still trying to  
NOTE Confidence: 0.838739812374115  
00:40:04.485 --> 00:40:05.844 answer that definitively.  
NOTE Confidence: 0.838739812374115  
00:40:05.850 --> 00:40:07.548 And immune therapy activity is very,  
NOTE Confidence: 0.838739812374115  
00:40:07.550 --> 00:40:08.910 very limited and there's a  
NOTE Confidence: 0.838739812374115

00:40:08.910 --> 00:40:10.660 lot we need to explore there,  
NOTE Confidence: 0.838739812374115

00:40:10.660 --> 00:40:12.358 and we're still dealing with the  
NOTE Confidence: 0.838739812374115

00:40:12.358 --> 00:40:13.490 fact that resistance develops.  
NOTE Confidence: 0.861340403556824

00:40:13.490 --> 00:40:14.910 So we've made tremendous progress.  
NOTE Confidence: 0.861340403556824

00:40:14.910 --> 00:40:18.015 But we still have a long way to go.  
NOTE Confidence: 0.861340403556824

00:40:18.020 --> 00:40:19.544 And that's where communication  
NOTE Confidence: 0.861340403556824

00:40:19.544 --> 00:40:21.449 is so important because some  
NOTE Confidence: 0.861340403556824

00:40:21.449 --> 00:40:22.948 patients do remarkably well.  
NOTE Confidence: 0.861340403556824

00:40:22.950 --> 00:40:24.840 I was meeting with one  
NOTE Confidence: 0.861340403556824

00:40:24.840 --> 00:40:26.352 of my patients yesterday.  
NOTE Confidence: 0.861340403556824

00:40:26.360 --> 00:40:28.250 I've been caring for for  
NOTE Confidence: 0.861340403556824

00:40:28.250 --> 00:40:29.762 eight years with metastatic,  
NOTE Confidence: 0.861340403556824

00:40:29.770 --> 00:40:30.794 EGFR, mutant lung cancer.  
NOTE Confidence: 0.861340403556824

00:40:30.794 --> 00:40:32.074 We're having to think about  
NOTE Confidence: 0.861340403556824

00:40:32.074 --> 00:40:33.408 her next line of treatment,  
NOTE Confidence: 0.861340403556824

00:40:33.410 --> 00:40:34.887 but she still on her last name,

NOTE Confidence: 0.861340403556824  
00:40:34.890 --> 00:40:36.660 but it's been eight years.  
NOTE Confidence: 0.861340403556824  
00:40:36.660 --> 00:40:37.868 Some patients do remarkably  
NOTE Confidence: 0.861340403556824  
00:40:37.868 --> 00:40:39.076 poorly on another patient.  
NOTE Confidence: 0.861340403556824  
00:40:39.080 --> 00:40:41.504 I saw, I think it was last Thursday.  
NOTE Confidence: 0.861340403556824  
00:40:41.510 --> 00:40:43.926 He's never had a good response to anything,  
NOTE Confidence: 0.861340403556824  
00:40:43.930 --> 00:40:45.925 even though he has a clear EGFR  
NOTE Confidence: 0.861340403556824  
00:40:45.925 --> 00:40:47.570 mutation in his lung cancer.  
NOTE Confidence: 0.861340403556824  
00:40:47.570 --> 00:40:49.388 And so why are they different?  
NOTE Confidence: 0.861340403556824  
00:40:49.390 --> 00:40:51.758 I can't tell, just based on the age  
NOTE Confidence: 0.861340403556824  
00:40:51.758 --> 00:40:53.630 of permutations that they have there.  
NOTE Confidence: 0.861340403556824  
00:40:53.630 --> 00:40:54.838 Other factors that we're  
NOTE Confidence: 0.861340403556824  
00:40:54.838 --> 00:40:55.744 trying to understand,  
NOTE Confidence: 0.861340403556824  
00:40:55.750 --> 00:40:57.906 but it's important than that when we  
NOTE Confidence: 0.861340403556824  
00:40:57.906 --> 00:41:00.288 talk about how someone is going to do,  
NOTE Confidence: 0.861340403556824  
00:41:00.290 --> 00:41:02.108 we're never too confident in that,  
NOTE Confidence: 0.861340403556824

00:41:02.110 --> 00:41:03.630 because we really don't know,  
NOTE Confidence: 0.861340403556824

00:41:03.630 --> 00:41:05.496 so we can often predict outcomes  
NOTE Confidence: 0.861340403556824

00:41:05.496 --> 00:41:06.740 that we can't always.  
NOTE Confidence: 0.861340403556824

00:41:06.740 --> 00:41:09.228 And we have to strive to keep the  
NOTE Confidence: 0.861340403556824

00:41:09.228 --> 00:41:12.079 trust of the patient and their family,  
NOTE Confidence: 0.861340403556824

00:41:12.080 --> 00:41:14.565 to help them relive given this uncertainty.  
NOTE Confidence: 0.861340403556824

00:41:14.570 --> 00:41:15.990 And so I mentioned,  
NOTE Confidence: 0.861340403556824

00:41:15.990 --> 00:41:19.199 I'm going to leave this in a little bit.  
NOTE Confidence: 0.861340403556824

00:41:19.200 --> 00:41:21.162 So this was when breath becomes  
NOTE Confidence: 0.861340403556824

00:41:21.162 --> 00:41:23.120 air written by Paul Kleanthi,  
NOTE Confidence: 0.861340403556824

00:41:23.120 --> 00:41:23.972 Yale medical student,  
NOTE Confidence: 0.861340403556824

00:41:23.972 --> 00:41:25.960 who then went on to do his  
NOTE Confidence: 0.861340403556824

00:41:26.025 --> 00:41:28.097 neurosurgical training at Stanford,  
NOTE Confidence: 0.861340403556824

00:41:28.100 --> 00:41:29.520 and he unfortunately died  
NOTE Confidence: 0.861340403556824

00:41:29.520 --> 00:41:31.295 of EGFR mutant lung cancer.  
NOTE Confidence: 0.861340403556824

00:41:31.300 --> 00:41:34.148 But while he was living with his disease,

NOTE Confidence: 0.861340403556824

00:41:34.150 --> 00:41:35.930 he wrote this amazing book.

NOTE Confidence: 0.861340403556824

00:41:35.930 --> 00:41:38.378 One of the quotes that I.

NOTE Confidence: 0.861340403556824

00:41:38.380 --> 00:41:40.977 Lee love from this is that the

NOTE Confidence: 0.861340403556824

00:41:40.977 --> 00:41:43.128 reason that doctors don't give

NOTE Confidence: 0.861340403556824

00:41:43.128 --> 00:41:45.056 patients specific prognosis is

NOTE Confidence: 0.861340403556824

00:41:45.056 --> 00:41:47.580 not merely because they cannot.

NOTE Confidence: 0.861340403556824

00:41:47.580 --> 00:41:49.902 What patients seek is not scientific

NOTE Confidence: 0.861340403556824

00:41:49.902 --> 00:41:51.450 knowledge that doctors hide

NOTE Confidence: 0.861340403556824

00:41:51.515 --> 00:41:53.270 but existential authenticity.

NOTE Confidence: 0.861340403556824

00:41:53.270 --> 00:41:56.014 Each person must find on his or

NOTE Confidence: 0.861340403556824

00:41:56.014 --> 00:41:58.600 her own getting too deeply into

NOTE Confidence: 0.861340403556824

00:41:58.600 --> 00:42:00.810 statistics is like trying to

NOTE Confidence: 0.861340403556824

00:42:00.810 --> 00:42:03.778 quench a thirst with salty water.

NOTE Confidence: 0.861340403556824

00:42:03.780 --> 00:42:06.582 The angst of facing mortality has

NOTE Confidence: 0.861340403556824

00:42:06.582 --> 00:42:09.100 no remedy in probability and so.

NOTE Confidence: 0.861340403556824



00:42:09.100 --> 00:42:10.540 That really captures the essence,  
NOTE Confidence: 0.861340403556824

00:42:10.540 --> 00:42:12.260 I think of what we tried to do  
NOTE Confidence: 0.861340403556824

00:42:12.260 --> 00:42:14.000 in this communication setting,  
NOTE Confidence: 0.861340403556824

00:42:14.000 --> 00:42:15.815 but written obviously far more  
NOTE Confidence: 0.861340403556824

00:42:15.815 --> 00:42:17.630 eloquently than I would ever  
NOTE Confidence: 0.861340403556824

00:42:17.696 --> 00:42:18.986 have been able to do.  
NOTE Confidence: 0.861340403556824

00:42:18.990 --> 00:42:21.986 And obviously we miss Paul very much.  
NOTE Confidence: 0.861340403556824

00:42:21.990 --> 00:42:23.957 So when we talk about communication tips,  
NOTE Confidence: 0.861340403556824

00:42:23.960 --> 00:42:25.808 these are a few of the things  
NOTE Confidence: 0.861340403556824

00:42:25.808 --> 00:42:27.630 that I like to think about.  
NOTE Confidence: 0.861340403556824

00:42:27.630 --> 00:42:29.597 One of them is about the numbers.  
NOTE Confidence: 0.861340403556824

00:42:29.600 --> 00:42:30.728 Just as Paul said,  
NOTE Confidence: 0.861340403556824

00:42:30.728 --> 00:42:32.138 but numbers to get remembered.  
NOTE Confidence: 0.861340403556824

00:42:32.140 --> 00:42:33.988 If you have an hour long conversation  
NOTE Confidence: 0.861340403556824

00:42:33.988 --> 00:42:36.013 with the patient and you mentioned a  
NOTE Confidence: 0.861340403556824

00:42:36.013 --> 00:42:37.777 number when they leave the conversation,

NOTE Confidence: 0.861340403556824  
00:42:37.780 --> 00:42:39.190 that's what they will remember.  
NOTE Confidence: 0.861340403556824  
00:42:39.190 --> 00:42:41.444 So you have to be very careful  
NOTE Confidence: 0.861340403556824  
00:42:41.444 --> 00:42:42.880 how you use them.  
NOTE Confidence: 0.861340403556824  
00:42:42.880 --> 00:42:44.405 And be very careful how  
NOTE Confidence: 0.861340403556824  
00:42:44.405 --> 00:42:45.320 prognosis is discussed.  
NOTE Confidence: 0.861340403556824  
00:42:45.320 --> 00:42:46.235 Avoid codeine medians,  
NOTE Confidence: 0.861340403556824  
00:42:46.235 --> 00:42:48.370 because if you quote a median again,  
NOTE Confidence: 0.861340403556824  
00:42:48.370 --> 00:42:50.200 that's the only thing Tillman remembers.  
NOTE Confidence: 0.861340403556824  
00:42:50.200 --> 00:42:51.725 Not everything we know about  
NOTE Confidence: 0.861340403556824  
00:42:51.725 --> 00:42:52.945 what a median means.  
NOTE Confidence: 0.861340403556824  
00:42:52.950 --> 00:42:56.325 She always give a range and I talk about.  
NOTE Confidence: 0.861340403556824  
00:42:56.330 --> 00:42:57.558 The worst possible outcomes,  
NOTE Confidence: 0.861340403556824  
00:42:57.558 --> 00:42:59.750 but I also talk about the best,  
NOTE Confidence: 0.861340403556824  
00:42:59.750 --> 00:43:01.927 but whenever I talk about the best,  
NOTE Confidence: 0.861340403556824  
00:43:01.930 --> 00:43:03.580 I always make sure I can  
NOTE Confidence: 0.861340403556824

00:43:03.580 --> 00:43:04.680 think of a specific  
NOTE Confidence: 0.885906279087067

00:43:04.752 --> 00:43:07.293 person who was there 'cause otherwise you're  
NOTE Confidence: 0.885906279087067

00:43:07.293 --> 00:43:10.018 just making a number up out of the air.  
NOTE Confidence: 0.885906279087067

00:43:10.020 --> 00:43:11.555 The prognosis for any individual  
NOTE Confidence: 0.885906279087067

00:43:11.555 --> 00:43:12.783 of course evolves overtime,  
NOTE Confidence: 0.885906279087067

00:43:12.790 --> 00:43:14.330 so help the patient to  
NOTE Confidence: 0.885906279087067

00:43:14.330 --> 00:43:15.870 understand that and their family,  
NOTE Confidence: 0.885906279087067

00:43:15.870 --> 00:43:17.795 and then try to guide the patient  
NOTE Confidence: 0.885906279087067

00:43:17.795 --> 00:43:19.260 in making life decisions.  
NOTE Confidence: 0.885906279087067

00:43:19.260 --> 00:43:21.395 They need to make based on probabilities  
NOTE Confidence: 0.885906279087067

00:43:21.395 --> 00:43:23.260 of how much time they have,  
NOTE Confidence: 0.885906279087067

00:43:23.260 --> 00:43:25.040 knowing that there's that uncertainty  
NOTE Confidence: 0.885906279087067

00:43:25.040 --> 00:43:26.464 encouraging patients to think  
NOTE Confidence: 0.885906279087067

00:43:26.464 --> 00:43:28.186 about the things they need to do,  
NOTE Confidence: 0.885906279087067

00:43:28.190 --> 00:43:31.398 and also about what they want to do.  
NOTE Confidence: 0.885906279087067

00:43:31.400 --> 00:43:33.398 It's really a terrible thing if

NOTE Confidence: 0.885906279087067  
00:43:33.398 --> 00:43:35.104 someone assumes that they have  
NOTE Confidence: 0.885906279087067  
00:43:35.104 --> 00:43:36.958 many years left when they don't,  
NOTE Confidence: 0.885906279087067  
00:43:36.960 --> 00:43:39.361 and therefore they don't do the things  
NOTE Confidence: 0.885906279087067  
00:43:39.361 --> 00:43:42.015 they would have done if they had known  
NOTE Confidence: 0.885906279087067  
00:43:42.015 --> 00:43:44.149 that they didn't have alot of time.  
NOTE Confidence: 0.885906279087067  
00:43:44.150 --> 00:43:45.902 But it's also terrible to take  
NOTE Confidence: 0.885906279087067  
00:43:45.902 --> 00:43:47.505 away hope from someone because  
NOTE Confidence: 0.885906279087067  
00:43:47.505 --> 00:43:49.385 there always is that uncertainty,  
NOTE Confidence: 0.885906279087067  
00:43:49.390 --> 00:43:51.352 so you try to guide but  
NOTE Confidence: 0.885906279087067  
00:43:51.352 --> 00:43:52.660 leave uncertainty on going.  
NOTE Confidence: 0.885906279087067  
00:43:52.660 --> 00:43:54.024 Dialogue is obviously critical.  
NOTE Confidence: 0.885906279087067  
00:43:54.024 --> 00:43:57.050 I would bring up the concept of risk and  
NOTE Confidence: 0.885906279087067  
00:43:57.050 --> 00:43:59.199 benefit in regard to therapy fairly early,  
NOTE Confidence: 0.885906279087067  
00:43:59.200 --> 00:44:01.864 and I frequently talk about that when I'm.  
NOTE Confidence: 0.885906279087067  
00:44:01.870 --> 00:44:03.688 Reviewing things because at some point  
NOTE Confidence: 0.885906279087067

00:44:03.688 --> 00:44:06.387 we are going to get to that point where  
NOTE Confidence: 0.885906279087067

00:44:06.387 --> 00:44:08.564 the risk of ongoing therapy is going  
NOTE Confidence: 0.885906279087067

00:44:08.564 --> 00:44:10.284 to outweigh the potential benefit.  
NOTE Confidence: 0.885906279087067

00:44:10.290 --> 00:44:13.410 And if you bring that up for the first time,  
NOTE Confidence: 0.885906279087067

00:44:13.410 --> 00:44:15.594 then it's a much more difficult conversation.  
NOTE Confidence: 0.885906279087067

00:44:15.600 --> 00:44:17.676 It's also really critical as you  
NOTE Confidence: 0.885906279087067

00:44:17.676 --> 00:44:19.650 engage the patient who is the  
NOTE Confidence: 0.885906279087067

00:44:19.650 --> 00:44:21.210 key person in all of this.  
NOTE Confidence: 0.885906279087067

00:44:21.210 --> 00:44:23.642 You've got to make sure the family also  
NOTE Confidence: 0.885906279087067

00:44:23.642 --> 00:44:26.135 knows what's going on and is aware of  
NOTE Confidence: 0.885906279087067

00:44:26.135 --> 00:44:27.726 the information that you're talking  
NOTE Confidence: 0.885906279087067

00:44:27.726 --> 00:44:29.931 about because the family is going to  
NOTE Confidence: 0.885906279087067

00:44:29.931 --> 00:44:32.150 live with the memory of the patient.  
NOTE Confidence: 0.885906279087067

00:44:32.150 --> 00:44:32.502 Forever.  
NOTE Confidence: 0.885906279087067

00:44:32.502 --> 00:44:34.966 And it's really important that there are  
NOTE Confidence: 0.885906279087067

00:44:34.966 --> 00:44:37.955 part of those decisions as much as possible,

NOTE Confidence: 0.885906279087067

00:44:37.960 --> 00:44:39.766 not to guide the patient 'cause it

NOTE Confidence: 0.885906279087067

00:44:39.766 --> 00:44:41.779 needs to be the patients choices,

NOTE Confidence: 0.885906279087067

00:44:41.780 --> 00:44:44.540 but to understand how the patient was making

NOTE Confidence: 0.885906279087067

00:44:44.540 --> 00:44:46.776 those choices and to be a part of that.

NOTE Confidence: 0.885906279087067

00:44:46.780 --> 00:44:48.892 I think that really helps with the piece

NOTE Confidence: 0.885906279087067

00:44:48.892 --> 00:44:51.186 for the family as they continue living,

NOTE Confidence: 0.885906279087067

00:44:51.190 --> 00:44:53.698 having lost an important loved one.

NOTE Confidence: 0.885906279087067

00:44:53.700 --> 00:44:55.180 When having a Frank conversation,

NOTE Confidence: 0.885906279087067

00:44:55.180 --> 00:44:57.420 pay careful attention to how you're being

NOTE Confidence: 0.885906279087067

00:44:57.420 --> 00:44:59.600 heard harder now in the world of zoom.

NOTE Confidence: 0.885906279087067

00:44:59.600 --> 00:45:01.532 Much easier when you're in a room

NOTE Confidence: 0.885906279087067

00:45:01.532 --> 00:45:03.525 with someone and you can watch the

NOTE Confidence: 0.885906279087067

00:45:03.525 --> 00:45:05.181 body language in their faces and

NOTE Confidence: 0.885906279087067

00:45:05.242 --> 00:45:07.162 and make sure that everyone is

NOTE Confidence: 0.885906279087067

00:45:07.162 --> 00:45:08.988 engaged in an understanding so that

NOTE Confidence: 0.885906279087067

00:45:08.988 --> 00:45:10.871 you can back up and rephrase as  
NOTE Confidence: 0.885906279087067

00:45:10.871 --> 00:45:12.579 necessary to get everyone together.  
NOTE Confidence: 0.885906279087067

00:45:12.580 --> 00:45:14.284 Really important to check back in  
NOTE Confidence: 0.885906279087067

00:45:14.284 --> 00:45:16.120 with the family and the patient.  
NOTE Confidence: 0.885906279087067

00:45:16.120 --> 00:45:18.670 If you're making a decision.  
NOTE Confidence: 0.885906279087067

00:45:18.670 --> 00:45:19.850 To have everybody understand  
NOTE Confidence: 0.885906279087067

00:45:19.850 --> 00:45:21.325 why that decision was made.  
NOTE Confidence: 0.885906279087067

00:45:21.330 --> 00:45:22.810 While we're choosing a particular  
NOTE Confidence: 0.885906279087067

00:45:22.810 --> 00:45:23.698 therapy or another,  
NOTE Confidence: 0.885906279087067

00:45:23.700 --> 00:45:25.765 because it's not always going to work,  
NOTE Confidence: 0.885906279087067

00:45:25.770 --> 00:45:27.856 and it's important that everybody knows how  
NOTE Confidence: 0.885906279087067

00:45:27.856 --> 00:45:30.428 we ended up making that decision together.  
NOTE Confidence: 0.885906279087067

00:45:30.430 --> 00:45:32.224 If you hear a really strong  
NOTE Confidence: 0.885906279087067

00:45:32.224 --> 00:45:34.040 objection to a particular treatment,  
NOTE Confidence: 0.885906279087067

00:45:34.040 --> 00:45:35.992 it's always good to ask why there are  
NOTE Confidence: 0.885906279087067

00:45:35.992 --> 00:45:38.188 a lot of stories that people have

NOTE Confidence: 0.885906279087067  
00:45:38.188 --> 00:45:40.296 based on their own experiences of  
NOTE Confidence: 0.885906279087067  
00:45:40.296 --> 00:45:41.888 family members experiences someone  
NOTE Confidence: 0.885906279087067  
00:45:41.888 --> 00:45:43.878 they heard about bad experience.  
NOTE Confidence: 0.868247807025909  
00:45:43.880 --> 00:45:46.058 To understand why what the particular  
NOTE Confidence: 0.868247807025909  
00:45:46.058 --> 00:45:48.143 patients facing is either similar or  
NOTE Confidence: 0.868247807025909  
00:45:48.143 --> 00:45:50.159 different that can help a lot too.  
NOTE Confidence: 0.868247807025909  
00:45:50.160 --> 00:45:51.276 If it all possible,  
NOTE Confidence: 0.868247807025909  
00:45:51.276 --> 00:45:52.950 never answer your phone or pager  
NOTE Confidence: 0.868247807025909  
00:45:53.003 --> 00:45:54.719 when you're in with the patient.  
NOTE Confidence: 0.868247807025909  
00:45:54.720 --> 00:45:55.880 100% attention really matters,  
NOTE Confidence: 0.868247807025909  
00:45:55.880 --> 00:45:57.330 no matter how crazy are  
NOTE Confidence: 0.868247807025909  
00:45:57.330 --> 00:45:58.708 busy things are in clinic,  
NOTE Confidence: 0.868247807025909  
00:45:58.710 --> 00:46:00.990 and for those of us who are commissioned,  
NOTE Confidence: 0.868247807025909  
00:46:00.990 --> 00:46:02.985 you walk out of the exam room.  
NOTE Confidence: 0.868247807025909  
00:46:02.990 --> 00:46:04.742 We got five people talking with  
NOTE Confidence: 0.868247807025909



00:46:04.742 --> 00:46:06.231 you about different things you're  
NOTE Confidence: 0.868247807025909

00:46:06.231 --> 00:46:07.827 trying to process all of that,  
NOTE Confidence: 0.868247807025909

00:46:07.830 --> 00:46:10.395 but when you go back in the exam room,  
NOTE Confidence: 0.868247807025909

00:46:10.400 --> 00:46:12.388 you just have to be there 100%.  
NOTE Confidence: 0.868247807025909

00:46:12.390 --> 00:46:13.815 Com you're listening and that  
NOTE Confidence: 0.868247807025909

00:46:13.815 --> 00:46:15.240 really makes a big difference.  
NOTE Confidence: 0.868247807025909

00:46:15.240 --> 00:46:16.932 Also, because the really the key  
NOTE Confidence: 0.868247807025909

00:46:16.932 --> 00:46:18.686 is being sure that the patient  
NOTE Confidence: 0.868247807025909

00:46:18.686 --> 00:46:20.660 and the family know that you care  
NOTE Confidence: 0.868247807025909

00:46:20.660 --> 00:46:22.389 about your patient as a person.  
NOTE Confidence: 0.868247807025909

00:46:22.390 --> 00:46:24.094 And that you are guiding them  
NOTE Confidence: 0.868247807025909

00:46:24.094 --> 00:46:25.945 to make the best decisions that  
NOTE Confidence: 0.868247807025909

00:46:25.945 --> 00:46:28.234 can help them live as long as  
NOTE Confidence: 0.868247807025909

00:46:28.234 --> 00:46:30.230 possible with good quality of life.  
NOTE Confidence: 0.868247807025909

00:46:30.230 --> 00:46:32.491 And I'm going to and then with  
NOTE Confidence: 0.868247807025909

00:46:32.491 --> 00:46:34.440 a quote from Joe Feldman,

NOTE Confidence: 0.868247807025909  
00:46:34.440 --> 00:46:35.844 who's amazing patient advocate  
NOTE Confidence: 0.868247807025909  
00:46:35.844 --> 00:46:37.248 within the EGFR world.  
NOTE Confidence: 0.868247807025909  
00:46:37.250 --> 00:46:40.058 And she does a lot with the ice,  
NOTE Confidence: 0.868247807025909  
00:46:40.060 --> 00:46:42.166 else she is a frequent speaker  
NOTE Confidence: 0.868247807025909  
00:46:42.166 --> 00:46:43.219 at our conferences,  
NOTE Confidence: 0.868247807025909  
00:46:43.220 --> 00:46:44.970 including our North America conference.  
NOTE Confidence: 0.868247807025909  
00:46:44.970 --> 00:46:47.076 And we were just there together  
NOTE Confidence: 0.868247807025909  
00:46:47.076 --> 00:46:48.480 a few weeks ago,  
NOTE Confidence: 0.868247807025909  
00:46:48.480 --> 00:46:50.310 and she talked about treating the  
NOTE Confidence: 0.868247807025909  
00:46:50.310 --> 00:46:52.340 whole patient on an intellectual,  
NOTE Confidence: 0.868247807025909  
00:46:52.340 --> 00:46:53.800 physical, and emotional level.  
NOTE Confidence: 0.868247807025909  
00:46:53.800 --> 00:46:56.377 We need to know that the doctor  
NOTE Confidence: 0.868247807025909  
00:46:56.377 --> 00:46:58.603 caring for us as a patient cares  
NOTE Confidence: 0.868247807025909  
00:46:58.603 --> 00:47:00.746 about us what we patients value  
NOTE Confidence: 0.868247807025909  
00:47:00.746 --> 00:47:02.894 can't be quantified in a curve.  
NOTE Confidence: 0.868247807025909

00:47:02.900 --> 00:47:04.630 Hazard ratios and clinical trial  
NOTE Confidence: 0.868247807025909

00:47:04.630 --> 00:47:06.360 numbers don't translate to real  
NOTE Confidence: 0.868247807025909

00:47:06.422 --> 00:47:08.306 life or capture the une quantifiable  
NOTE Confidence: 0.868247807025909

00:47:08.306 --> 00:47:10.160 meaning of a person's life show.  
NOTE Confidence: 0.868247807025909

00:47:10.160 --> 00:47:11.480 I thought she really,  
NOTE Confidence: 0.868247807025909

00:47:11.480 --> 00:47:14.120 really captured summed it up well with that.  
NOTE Confidence: 0.868247807025909

00:47:14.120 --> 00:47:16.460 OK, so overall summary.  
NOTE Confidence: 0.868247807025909

00:47:16.460 --> 00:47:18.170 Over the last 15 years,  
NOTE Confidence: 0.868247807025909

00:47:18.170 --> 00:47:20.258 we know that Egypt artique eyes  
NOTE Confidence: 0.868247807025909

00:47:20.258 --> 00:47:23.034 alone or the standard of care in a  
NOTE Confidence: 0.868247807025909

00:47:23.034 --> 00:47:25.002 patient with EGFR mutant lung cancer,  
NOTE Confidence: 0.868247807025909

00:47:25.010 --> 00:47:28.139 but you have to find the mutation.  
NOTE Confidence: 0.868247807025909

00:47:28.140 --> 00:47:28.964 Veggie combinations.  
NOTE Confidence: 0.868247807025909

00:47:28.964 --> 00:47:29.376 Encouraging,  
NOTE Confidence: 0.868247807025909

00:47:29.376 --> 00:47:32.260 but so far we haven't seen that  
NOTE Confidence: 0.868247807025909

00:47:32.324 --> 00:47:34.859 translate into overall survival benefit.

NOTE Confidence: 0.868247807025909  
00:47:34.860 --> 00:47:36.600 EGFR combinations look really promising,  
NOTE Confidence: 0.868247807025909  
00:47:36.600 --> 00:47:38.012 but not standard yet.  
NOTE Confidence: 0.868247807025909  
00:47:38.012 --> 00:47:39.071 Chemotherapy combinations maybe  
NOTE Confidence: 0.868247807025909  
00:47:39.071 --> 00:47:40.760 will move into first line,  
NOTE Confidence: 0.868247807025909  
00:47:40.760 --> 00:47:42.836 seemed to have improved overall survival,  
NOTE Confidence: 0.868247807025909  
00:47:42.840 --> 00:47:44.922 but we haven't really bought that  
NOTE Confidence: 0.868247807025909  
00:47:44.922 --> 00:47:46.328 concept yet. Immune therapy.  
NOTE Confidence: 0.868247807025909  
00:47:46.328 --> 00:47:48.452 That's a promise for so many  
NOTE Confidence: 0.868247807025909  
00:47:48.452 --> 00:47:50.203 patients living with lung cancer  
NOTE Confidence: 0.868247807025909  
00:47:50.203 --> 00:47:51.515 and other cancers now.  
NOTE Confidence: 0.868247807025909  
00:47:51.520 --> 00:47:53.949 But in the world of EGFR therapy,  
NOTE Confidence: 0.868247807025909  
00:47:53.950 --> 00:47:56.379 there's a lot we don't understand yet.  
NOTE Confidence: 0.868247807025909  
00:47:56.380 --> 00:47:58.718 And that brings us to the fact  
NOTE Confidence: 0.868247807025909  
00:47:58.718 --> 00:48:01.102 that for all of these advances  
NOTE Confidence: 0.868247807025909  
00:48:01.102 --> 00:48:03.694 and wonderful things that we do.  
NOTE Confidence: 0.868247807025909

00:48:03.700 --> 00:48:05.230 We still aren't caring people.  
NOTE Confidence: 0.868247807025909

00:48:05.230 --> 00:48:08.280 We still have a lot that we need to do.  
NOTE Confidence: 0.868247807025909

00:48:08.280 --> 00:48:10.110 I have intentionally not gone into.  
NOTE Confidence: 0.868247807025909

00:48:10.110 --> 00:48:12.238 What do we do in early stage?  
NOTE Confidence: 0.868247807025909

00:48:12.240 --> 00:48:13.652 Lung cancer therapy today?  
NOTE Confidence: 0.868247807025909

00:48:13.652 --> 00:48:15.417 'cause there's been some tremendous  
NOTE Confidence: 0.868247807025909

00:48:15.417 --> 00:48:16.892 advances there or with Theodore  
NOTE Confidence: 0.868247807025909

00:48:16.892 --> 00:48:18.500 trial and other ways of looking  
NOTE Confidence: 0.868247807025909

00:48:18.555 --> 00:48:20.253 at bringing in Egypt or therapy  
NOTE Confidence: 0.868247807025909

00:48:20.253 --> 00:48:21.696 earlier to those patients who  
NOTE Confidence: 0.868247807025909

00:48:21.696 --> 00:48:22.920 can theoretically be cured.  
NOTE Confidence: 0.868247807025909

00:48:22.920 --> 00:48:23.263 Today,  
NOTE Confidence: 0.868247807025909

00:48:23.263 --> 00:48:25.321 I wanted to really focus on  
NOTE Confidence: 0.868247807025909

00:48:25.321 --> 00:48:26.926 metastatic disease and the fact  
NOTE Confidence: 0.868247807025909

00:48:26.926 --> 00:48:28.704 that with all that we can do,  
NOTE Confidence: 0.868247807025909

00:48:28.710 --> 00:48:29.978 it still about communication

NOTE Confidence: 0.868247807025909  
00:48:29.978 --> 00:48:31.880 and really to help our patients  
NOTE Confidence: 0.858358144760132  
00:48:31.941 --> 00:48:33.411 make the right choices for  
NOTE Confidence: 0.858358144760132  
00:48:33.411 --> 00:48:34.587 themselves and to live.  
NOTE Confidence: 0.858358144760132  
00:48:34.590 --> 00:48:35.810 Despite facing the uncertainties  
NOTE Confidence: 0.858358144760132  
00:48:35.810 --> 00:48:37.338 of cancer, so thank you.  
NOTE Confidence: 0.700433671474457  
00:48:43.290 --> 00:48:45.220 Oh, you're on mute Roy.  
NOTE Confidence: 0.819496035575867  
00:48:45.940 --> 00:48:46.963 Thanks thanks Heather.  
NOTE Confidence: 0.819496035575867  
00:48:46.963 --> 00:48:49.630 That was wonderful and really great to see.  
NOTE Confidence: 0.819496035575867  
00:48:49.630 --> 00:48:51.640 The progress made in 15 years.  
NOTE Confidence: 0.819496035575867  
00:48:51.640 --> 00:48:54.326 You know a lot of it, you know,  
NOTE Confidence: 0.819496035575867  
00:48:54.326 --> 00:48:56.692 stimulated by the work of John and  
NOTE Confidence: 0.819496035575867  
00:48:56.692 --> 00:48:59.133 others were open for questions now I  
NOTE Confidence: 0.819496035575867  
00:48:59.133 --> 00:49:01.688 guess we do questions in the chat room.  
NOTE Confidence: 0.819496035575867  
00:49:01.690 --> 00:49:03.030 I see Charlie here.  
NOTE Confidence: 0.819496035575867  
00:49:03.030 --> 00:49:05.040 Maybe we'll start with a few.  
NOTE Confidence: 0.819496035575867

00:49:05.040 --> 00:49:07.133 Well, while you get while they come  
NOTE Confidence: 0.819496035575867

00:49:07.133 --> 00:49:09.730 in for the EGFR mutated lung cancer.  
NOTE Confidence: 0.819496035575867

00:49:09.730 --> 00:49:13.080 Of course you know you see a lot of it,  
NOTE Confidence: 0.819496035575867

00:49:13.080 --> 00:49:14.885 especially where you live because  
NOTE Confidence: 0.819496035575867

00:49:14.885 --> 00:49:16.690 it's so prominent in Asians.  
NOTE Confidence: 0.819496035575867

00:49:16.690 --> 00:49:19.106 Do we know yet why has anyone looked  
NOTE Confidence: 0.819496035575867

00:49:19.106 --> 00:49:21.896 at the genetics of that to understand  
NOTE Confidence: 0.819496035575867

00:49:21.896 --> 00:49:24.476 no other certain sequences or or  
NOTE Confidence: 0.819496035575867

00:49:24.476 --> 00:49:26.840 genetics that can explain that? So  
NOTE Confidence: 0.810994863510132

00:49:26.840 --> 00:49:28.348 it's a great question,  
NOTE Confidence: 0.810994863510132

00:49:28.348 --> 00:49:30.610 so there are multiple efforts on  
NOTE Confidence: 0.810994863510132

00:49:30.688 --> 00:49:33.229 going to try to answer that question.  
NOTE Confidence: 0.810994863510132

00:49:33.230 --> 00:49:35.378 So my last international trip before  
NOTE Confidence: 0.810994863510132

00:49:35.378 --> 00:49:37.370 travel ended was last January.  
NOTE Confidence: 0.810994863510132

00:49:37.370 --> 00:49:39.250 I was in Taipei, Taiwan.  
NOTE Confidence: 0.810994863510132

00:49:39.250 --> 00:49:42.386 James Gang had invited me to the National

NOTE Confidence: 0.810994863510132

00:49:42.386 --> 00:49:44.509 Taiwan University and there are some.

NOTE Confidence: 0.810994863510132

00:49:44.510 --> 00:49:46.664 There's amazing work being done there

NOTE Confidence: 0.810994863510132

00:49:46.664 --> 00:49:48.951 in in multiple other Asian countries

NOTE Confidence: 0.810994863510132

00:49:48.951 --> 00:49:51.695 trying to look at the nuances subtleties.

NOTE Confidence: 0.810994863510132

00:49:51.700 --> 00:49:54.628 They've done a lot of screening as well.

NOTE Confidence: 0.810994863510132

00:49:54.630 --> 00:49:56.790 That involves screening and non smokers

NOTE Confidence: 0.810994863510132

00:49:56.790 --> 00:49:59.388 trying to figure out you know what

NOTE Confidence: 0.810994863510132

00:49:59.388 --> 00:50:01.218 what's happening and they've very

NOTE Confidence: 0.810994863510132

00:50:01.218 --> 00:50:03.090 clearly shown as significant increase

NOTE Confidence: 0.810994863510132

00:50:03.090 --> 00:50:05.610 in adenocarcinoma of the lung in non

NOTE Confidence: 0.810994863510132

00:50:05.610 --> 00:50:08.895 smokers and it's both in men and in women.

NOTE Confidence: 0.810994863510132

00:50:08.900 --> 00:50:10.886 I'm actually working with the group

NOTE Confidence: 0.810994863510132

00:50:10.886 --> 00:50:12.930 that's from UC Davis University,

NOTE Confidence: 0.810994863510132

00:50:12.930 --> 00:50:14.760 California Davis University of California,

NOTE Confidence: 0.810994863510132

00:50:14.760 --> 00:50:16.590 San Francisco and then Stanford.

NOTE Confidence: 0.810994863510132



00:50:16.590 --> 00:50:19.398 We have a narrow one that's finding a  
NOTE Confidence: 0.810994863510132

00:50:19.398 --> 00:50:21.790 case control study that we're doing.  
NOTE Confidence: 0.810994863510132

00:50:21.790 --> 00:50:23.590 Looking at Asian never smoking women  
NOTE Confidence: 0.810994863510132

00:50:23.590 --> 00:50:25.200 who have developed lung cancer,  
NOTE Confidence: 0.810994863510132

00:50:25.200 --> 00:50:27.489 almost all of whom have EGFR mutants  
NOTE Confidence: 0.810994863510132

00:50:27.489 --> 00:50:29.826 mutations and then doing a match control  
NOTE Confidence: 0.810994863510132

00:50:29.826 --> 00:50:32.085 of very similar people who don't have  
NOTE Confidence: 0.810994863510132

00:50:32.085 --> 00:50:34.229 lung cancer and trying to see if what  
NOTE Confidence: 0.810994863510132

00:50:34.229 --> 00:50:36.724 we are able to find there and that of  
NOTE Confidence: 0.810994863510132

00:50:36.724 --> 00:50:38.838 course involves sample collections as well.  
NOTE Confidence: 0.810994863510132

00:50:38.840 --> 00:50:40.700 And there are a lot of  
NOTE Confidence: 0.810994863510132

00:50:40.700 --> 00:50:41.630 similar ongoing efforts,  
NOTE Confidence: 0.810994863510132

00:50:41.630 --> 00:50:43.702 but we don't know an for me here  
NOTE Confidence: 0.810994863510132

00:50:43.702 --> 00:50:45.349 in Northern California though,  
NOTE Confidence: 0.810994863510132

00:50:45.350 --> 00:50:47.950 a lot of my patience with you from you and  
NOTE Confidence: 0.810994863510132

00:50:48.016 --> 00:50:50.620 lung cancer are never smoking Asian women.

NOTE Confidence: 0.810994863510132

00:50:50.620 --> 00:50:52.797 I also have a whole lot of.

NOTE Confidence: 0.810994863510132

00:50:52.800 --> 00:50:54.230 People have multiple different ethnicities,

NOTE Confidence: 0.810994863510132

00:50:54.230 --> 00:50:55.088 men and women.

NOTE Confidence: 0.810994863510132

00:50:55.088 --> 00:50:56.804 Different age ranges who also have

NOTE Confidence: 0.810994863510132

00:50:56.804 --> 00:50:58.790 each of our mutant lung cancer show.

NOTE Confidence: 0.810994863510132

00:50:58.790 --> 00:51:00.210 It's not just that group,

NOTE Confidence: 0.810994863510132

00:51:00.210 --> 00:51:01.938 but there's gotta be something 'cause

NOTE Confidence: 0.810994863510132

00:51:01.938 --> 00:51:04.283 it does seem to be increasing and were

NOTE Confidence: 0.810994863510132

00:51:04.283 --> 00:51:06.200 still baffled as to what that is.

NOTE Confidence: 0.788463294506073

00:51:06.750 --> 00:51:08.556 Great, thanks for the next question.

NOTE Confidence: 0.788463294506073

00:51:08.560 --> 00:51:10.457 We have a special guest 15 years

NOTE Confidence: 0.788463294506073

00:51:10.457 --> 00:51:11.995 ago a young Scott Guettinger

NOTE Confidence: 0.788463294506073

00:51:11.995 --> 00:51:14.298 came to Yale to work with Sean.

NOTE Confidence: 0.788463294506073

00:51:14.300 --> 00:51:15.810 Sadly they only work together

NOTE Confidence: 0.788463294506073

00:51:15.810 --> 00:51:17.320 for know about a year,

NOTE Confidence: 0.788463294506073

00:51:17.320 --> 00:51:19.126 but if Scott turned out OK,  
NOTE Confidence: 0.788463294506073

00:51:19.130 --> 00:51:20.640 Jonathan done OK with you.  
NOTE Confidence: 0.788463294506073

00:51:20.640 --> 00:51:23.260 So Scott, I'm going to move over so I put  
NOTE Confidence: 0.788463294506073

00:51:23.328 --> 00:51:26.080 my mask on Scotts gonna ask alive question.  
NOTE Confidence: 0.788463294506073

00:51:26.080 --> 00:51:28.510 These are Dart leader in lung cancer.  
NOTE Confidence: 0.788463294506073

00:51:28.510 --> 00:51:31.200 To see you. Very talk I'm.  
NOTE Confidence: 0.788463294506073

00:51:31.200 --> 00:51:33.855 I don't think you got into it too much,  
NOTE Confidence: 0.788463294506073

00:51:33.860 --> 00:51:35.172 but I'm just curious.  
NOTE Confidence: 0.788463294506073

00:51:35.172 --> 00:51:37.640 For your patience to progress at multiple  
NOTE Confidence: 0.788463294506073

00:51:37.640 --> 00:51:39.815 sites while getting closer mitted,  
NOTE Confidence: 0.788463294506073

00:51:39.820 --> 00:51:42.588 do you continue who are not trial candidates?  
NOTE Confidence: 0.788463294506073

00:51:42.590 --> 00:51:44.840 Do you continue the those fermented  
NOTE Confidence: 0.788463294506073

00:51:44.840 --> 00:51:47.028 with the chemotherapy to stop it  
NOTE Confidence: 0.788463294506073

00:51:47.028 --> 00:51:49.212 along the lines of the impress trial  
NOTE Confidence: 0.788463294506073

00:51:49.212 --> 00:51:51.615 where we didn't see a benefit from  
NOTE Confidence: 0.788463294506073

00:51:51.615 --> 00:51:53.662 at least first generation TK eyes?

NOTE Confidence: 0.788463294506073

00:51:53.662 --> 00:51:55.738 How do you handle that situation?

NOTE Confidence: 0.802918910980225

00:51:55.740 --> 00:51:57.798 That's a great question, so obviously

NOTE Confidence: 0.802918910980225

00:51:57.798 --> 00:51:59.540 it's different for different folks.

NOTE Confidence: 0.802918910980225

00:51:59.540 --> 00:52:01.969 So first answer the first part of

NOTE Confidence: 0.802918910980225

00:52:01.969 --> 00:52:04.099 question you didn't actually ask which

NOTE Confidence: 0.802918910980225

00:52:04.099 --> 00:52:06.879 is if someone is progressing in a single

NOTE Confidence: 0.802918910980225

00:52:06.879 --> 00:52:09.255 or a couple areas, we will continue.

NOTE Confidence: 0.802918910980225

00:52:09.255 --> 00:52:10.675 Oh Smyrna bandu radiation.

NOTE Confidence: 0.802918910980225

00:52:10.680 --> 00:52:12.112 Or other local ablative

NOTE Confidence: 0.802918910980225

00:52:12.112 --> 00:52:13.186 therapy whenever possible,

NOTE Confidence: 0.802918910980225

00:52:13.190 --> 00:52:15.110 and try to extend the time

NOTE Confidence: 0.802918910980225

00:52:15.110 --> 00:52:17.140 that they're on that treatment.

NOTE Confidence: 0.802918910980225

00:52:17.140 --> 00:52:19.796 If we get to a point where they

NOTE Confidence: 0.802918910980225

00:52:19.796 --> 00:52:21.890 are definitely needing to switch

NOTE Confidence: 0.802918910980225

00:52:21.890 --> 00:52:24.145 to a different systemic therapy.

NOTE Confidence: 0.802918910980225

00:52:24.150 --> 00:52:25.920 Looking for trials first and foremost,  
NOTE Confidence: 0.802918910980225

00:52:25.920 --> 00:52:27.894 but if we can't and they're going  
NOTE Confidence: 0.802918910980225

00:52:27.894 --> 00:52:30.610 to switch to chemo, not on a trial.  
NOTE Confidence: 0.802918910980225

00:52:30.610 --> 00:52:32.770 It will depend on the patient.  
NOTE Confidence: 0.802918910980225

00:52:32.770 --> 00:52:34.280 If they have significant amount  
NOTE Confidence: 0.802918910980225

00:52:34.280 --> 00:52:35.186 of brain disease,  
NOTE Confidence: 0.802918910980225

00:52:35.190 --> 00:52:37.038 I will continue the OCE myrnam and  
NOTE Confidence: 0.802918910980225

00:52:37.038 --> 00:52:38.830 start them on the chemotherapy.  
NOTE Confidence: 0.802918910980225

00:52:38.830 --> 00:52:40.038 Continuing osimertinib for some  
NOTE Confidence: 0.802918910980225

00:52:40.038 --> 00:52:41.246 of the other patients.  
NOTE Confidence: 0.802918910980225

00:52:41.250 --> 00:52:43.887 I will stop it and part of my rationale  
NOTE Confidence: 0.802918910980225

00:52:43.887 --> 00:52:46.097 behind that is I watch them closely.  
NOTE Confidence: 0.802918910980225

00:52:46.100 --> 00:52:48.214 I do believe that flare can happen,  
NOTE Confidence: 0.802918910980225

00:52:48.220 --> 00:52:49.356 but it's pretty rare.  
NOTE Confidence: 0.802918910980225

00:52:49.356 --> 00:52:51.437 So if a patient suddenly gets drastically  
NOTE Confidence: 0.802918910980225

00:52:51.437 --> 00:52:53.677 worse when we stop the jiffi drug,

NOTE Confidence: 0.802918910980225  
00:52:53.680 --> 00:52:54.888 their back on it,  
NOTE Confidence: 0.802918910980225  
00:52:54.888 --> 00:52:56.096 they stay on it.  
NOTE Confidence: 0.802918910980225  
00:52:56.100 --> 00:52:58.102 I've had that happen more in people  
NOTE Confidence: 0.802918910980225  
00:52:58.102 --> 00:53:00.040 with bone metastases and interesting Lee.  
NOTE Confidence: 0.802918910980225  
00:53:00.040 --> 00:53:02.812 I think if you read when breath becomes air.  
NOTE Confidence: 0.802918910980225  
00:53:02.820 --> 00:53:04.708 Paul was one of the people I continued  
NOTE Confidence: 0.802918910980225  
00:53:04.708 --> 00:53:06.600 on and he never got to Summerton,  
NOTE Confidence: 0.802918910980225  
00:53:06.600 --> 00:53:08.322 but I can't because he was his  
NOTE Confidence: 0.802918910980225  
00:53:08.322 --> 00:53:09.370 disease was before that,  
NOTE Confidence: 0.802918910980225  
00:53:09.370 --> 00:53:11.330 but I continued him on 'cause he was  
NOTE Confidence: 0.802918910980225  
00:53:11.330 --> 00:53:13.127 someone who as soon as we stopped he  
NOTE Confidence: 0.802918910980225  
00:53:13.127 --> 00:53:14.891 had bone pain so he was definitely  
NOTE Confidence: 0.802918910980225  
00:53:14.891 --> 00:53:16.928 someone who flared so he never stopped.  
NOTE Confidence: 0.802918910980225  
00:53:16.930 --> 00:53:19.464 But for other patients I will stop.  
NOTE Confidence: 0.802918910980225  
00:53:19.470 --> 00:53:21.718 And part of the rationale is that by  
NOTE Confidence: 0.802918910980225

00:53:21.718 --> 00:53:23.695 stopping the EGFR TK on the patients  
NOTE Confidence: 0.802918910980225

00:53:23.695 --> 00:53:26.139 where you can and doing with chemotherapy,  
NOTE Confidence: 0.802918910980225

00:53:26.140 --> 00:53:28.066 the resistance that develops at that  
NOTE Confidence: 0.802918910980225

00:53:28.066 --> 00:53:29.954 point after they've been on chemo  
NOTE Confidence: 0.802918910980225

00:53:29.954 --> 00:53:31.872 for awhile tends to be much more  
NOTE Confidence: 0.802918910980225

00:53:31.872 --> 00:53:33.410 responsive to restarting and EGFR.  
NOTE Confidence: 0.802918910980225

00:53:33.410 --> 00:53:35.394 TK I in the context of a study  
NOTE Confidence: 0.802918910980225

00:53:35.394 --> 00:53:36.740 or some combination,  
NOTE Confidence: 0.802918910980225

00:53:36.740 --> 00:53:38.854 so that's while I'll think about it,  
NOTE Confidence: 0.802918910980225

00:53:38.860 --> 00:53:40.972 but a lot of my longer term patients  
NOTE Confidence: 0.802918910980225

00:53:40.972 --> 00:53:43.217 right now we don't stop because they've  
NOTE Confidence: 0.802918910980225

00:53:43.217 --> 00:53:45.230 had things where they've had bone,  
NOTE Confidence: 0.802918910980225

00:53:45.230 --> 00:53:46.740 Mets, or other problems so.  
NOTE Confidence: 0.89730766415596

00:53:47.540 --> 00:53:50.816 Thank you yeah. Great thanks Scott.  
NOTE Confidence: 0.89730766415596

00:53:50.820 --> 00:53:54.726 We have a few questions in the chat room.  
NOTE Confidence: 0.89730766415596

00:53:54.730 --> 00:53:58.762 Um? It's from Sarah Goldberg.

NOTE Confidence: 0.89730766415596  
00:53:58.762 --> 00:54:01.570 Hi Sarah, was with us last night.  
NOTE Confidence: 0.89730766415596  
00:54:01.570 --> 00:54:03.665 You see any promising avenues  
NOTE Confidence: 0.89730766415596  
00:54:03.665 --> 00:54:05.760 for using immunotherapy in each  
NOTE Confidence: 0.89730766415596  
00:54:05.833 --> 00:54:07.933 year from you in lung cancer  
NOTE Confidence: 0.89730766415596  
00:54:07.933 --> 00:54:10.840 patients beyond PD one agents? Oh,  
NOTE Confidence: 0.829002901911736  
00:54:10.840 --> 00:54:12.433 great question Sarah.  
NOTE Confidence: 0.829002901911736  
00:54:12.433 --> 00:54:17.019 So I'll again into the first part of that.  
NOTE Confidence: 0.829002901911736  
00:54:17.020 --> 00:54:18.625 So with the checkpoint inhibitors  
NOTE Confidence: 0.829002901911736  
00:54:18.625 --> 00:54:20.930 I've had a couple of patients who  
NOTE Confidence: 0.829002901911736  
00:54:20.930 --> 00:54:22.844 have done very well with them.  
NOTE Confidence: 0.829002901911736  
00:54:22.850 --> 00:54:24.590 They were patients tending to  
NOTE Confidence: 0.829002901911736  
00:54:24.590 --> 00:54:27.136 VL 858 are not deletion 19 and  
NOTE Confidence: 0.829002901911736  
00:54:27.136 --> 00:54:28.966 that's something that in Taiwan.  
NOTE Confidence: 0.829002901911736  
00:54:28.970 --> 00:54:30.434 They've been looking at.  
NOTE Confidence: 0.829002901911736  
00:54:30.434 --> 00:54:33.290 A lot also tended to have high PD,  
NOTE Confidence: 0.829002901911736



00:54:33.290 --> 00:54:35.738 L1, and so a couple folks  
NOTE Confidence: 0.829002901911736

00:54:35.738 --> 00:54:38.120 have done well and we are.  
NOTE Confidence: 0.829002901911736

00:54:38.120 --> 00:54:40.340 Participating in a study looking  
NOTE Confidence: 0.829002901911736

00:54:40.340 --> 00:54:42.116 at chemo with carboplatin.  
NOTE Confidence: 0.829002901911736

00:54:42.120 --> 00:54:43.449 Pemetrexed said bevacizumab  
NOTE Confidence: 0.829002901911736

00:54:43.449 --> 00:54:45.664 plus or minus a Tezos.  
NOTE Confidence: 0.829002901911736

00:54:45.670 --> 00:54:48.880 This is a multi site study.  
NOTE Confidence: 0.829002901911736

00:54:48.880 --> 00:54:51.656 So I think there might be room there,  
NOTE Confidence: 0.829002901911736

00:54:51.660 --> 00:54:53.430 but it's not something I'm doing  
NOTE Confidence: 0.829002901911736

00:54:53.430 --> 00:54:56.377 is often off trial as far as other  
NOTE Confidence: 0.829002901911736

00:54:56.377 --> 00:54:57.573 immunomodulatory modulators, yes,  
NOTE Confidence: 0.829002901911736

00:54:57.573 --> 00:55:00.317 but I'm not a good enough immunologist to  
NOTE Confidence: 0.829002901911736

00:55:00.317 --> 00:55:03.150 tell you exactly what that's going to be.  
NOTE Confidence: 0.829002901911736

00:55:03.150 --> 00:55:04.908 I think that it's something that  
NOTE Confidence: 0.829002901911736

00:55:04.908 --> 00:55:07.263 a lot of us are watching really  
NOTE Confidence: 0.829002901911736

00:55:07.263 --> 00:55:09.867 closely to try to understand what is

NOTE Confidence: 0.829002901911736  
00:55:09.943 --> 00:55:12.540 it that the simple explanation is EGFR?  
NOTE Confidence: 0.829002901911736  
00:55:12.540 --> 00:55:13.932 Mutant lung cancer doesn't  
NOTE Confidence: 0.829002901911736  
00:55:13.932 --> 00:55:15.672 have that many new antigens,  
NOTE Confidence: 0.829002901911736  
00:55:15.680 --> 00:55:17.756 'cause it's not very complex tumor,  
NOTE Confidence: 0.829002901911736  
00:55:17.760 --> 00:55:18.432 but then,  
NOTE Confidence: 0.829002901911736  
00:55:18.432 --> 00:55:18.768 overtime.  
NOTE Confidence: 0.829002901911736  
00:55:18.768 --> 00:55:20.448 Theoretically it gets more complex,  
NOTE Confidence: 0.829002901911736  
00:55:20.450 --> 00:55:22.172 so there should be more NEO  
NOTE Confidence: 0.829002901911736  
00:55:22.172 --> 00:55:23.880 antigens but really knew antigens.  
NOTE Confidence: 0.829002901911736  
00:55:23.880 --> 00:55:26.064 Not all Neo antigens are the same,  
NOTE Confidence: 0.829002901911736  
00:55:26.070 --> 00:55:28.392 and so I think that if we can figure  
NOTE Confidence: 0.829002901911736  
00:55:28.392 --> 00:55:31.166 out what is it that can make that  
NOTE Confidence: 0.829002901911736  
00:55:31.166 --> 00:55:32.929 cancer more identifiable to immune,  
NOTE Confidence: 0.829002901911736  
00:55:32.930 --> 00:55:35.107 system will have ways to move forward.  
NOTE Confidence: 0.829002901911736  
00:55:35.110 --> 00:55:36.982 But I don't think we've figured  
NOTE Confidence: 0.829002901911736

00:55:36.982 --> 00:55:38.550 that out very well yet,  
NOTE Confidence: 0.829002901911736

00:55:38.550 --> 00:55:38.860 so.  
NOTE Confidence: 0.74587082862854

00:55:40.690 --> 00:55:43.510 Great, we have one from Katie  
NOTE Confidence: 0.74587082862854

00:55:43.510 --> 00:55:46.239 Palitti who you know as well.  
NOTE Confidence: 0.74587082862854

00:55:46.240 --> 00:55:48.304 When I don't know if we can have  
NOTE Confidence: 0.74587082862854

00:55:48.304 --> 00:55:50.087 Katie give it live or question,  
NOTE Confidence: 0.74587082862854

00:55:50.090 --> 00:55:52.015 I don't know how to do that,  
NOTE Confidence: 0.74587082862854

00:55:52.020 --> 00:55:53.390 so I'll just ask it.  
NOTE Confidence: 0.74587082862854

00:55:53.390 --> 00:55:54.896 She, she says she's only at  
NOTE Confidence: 0.74587082862854

00:55:54.896 --> 00:55:56.560 one of the other leaders of  
NOTE Confidence: 0.74587082862854

00:55:56.560 --> 00:55:58.065 our sport program in EGFR.  
NOTE Confidence: 0.74587082862854

00:55:58.070 --> 00:55:59.988 Resistance does thank you for great lecture.  
NOTE Confidence: 0.74587082862854

00:55:59.990 --> 00:56:00.665 Heather grey talk.  
NOTE Confidence: 0.74587082862854

00:56:00.665 --> 00:56:02.015 I was wondering what you think  
NOTE Confidence: 0.74587082862854

00:56:02.015 --> 00:56:03.748 we should be thinking about to  
NOTE Confidence: 0.74587082862854

00:56:03.748 --> 00:56:04.912 address the heterogeneity of

NOTE Confidence: 0.74587082862854

00:56:04.912 --> 00:56:06.177 resistance mechanisms that can

NOTE Confidence: 0.74587082862854

00:56:06.177 --> 00:56:07.417 emerge in individual patients.

NOTE Confidence: 0.841703712940216

00:56:08.070 --> 00:56:09.111 Great question Katie.

NOTE Confidence: 0.841703712940216

00:56:09.111 --> 00:56:12.331 So I think that as much as the targeted

NOTE Confidence: 0.841703712940216

00:56:12.331 --> 00:56:14.816 story is a beautiful story and to

NOTE Confidence: 0.841703712940216

00:56:14.816 --> 00:56:17.421 be able to say we found the deletion

NOTE Confidence: 0.841703712940216

00:56:17.421 --> 00:56:19.805 19 and we treat it with their lot

NOTE Confidence: 0.841703712940216

00:56:19.805 --> 00:56:22.121 nib and then the T790M developed and

NOTE Confidence: 0.841703712940216

00:56:22.121 --> 00:56:24.527 then we treated with those summerton.

NOTE Confidence: 0.841703712940216

00:56:24.530 --> 00:56:26.933 If that only gets a so far and I

NOTE Confidence: 0.841703712940216

00:56:26.933 --> 00:56:28.934 don't think we're ever going to

NOTE Confidence: 0.841703712940216

00:56:28.934 --> 00:56:31.077 be able to really get completely

NOTE Confidence: 0.841703712940216

00:56:31.077 --> 00:56:33.982 around that because as time goes on

NOTE Confidence: 0.841703712940216

00:56:33.982 --> 00:56:35.852 there's more and more heterogeneity

NOTE Confidence: 0.841703712940216

00:56:35.852 --> 00:56:37.228 in the resistance pathways.

NOTE Confidence: 0.841703712940216

00:56:37.230 --> 00:56:38.940 Should we have to be?  
NOTE Confidence: 0.841703712940216

00:56:38.940 --> 00:56:39.726 Thinking about it,  
NOTE Confidence: 0.841703712940216

00:56:39.726 --> 00:56:40.774 you know the straightforward  
NOTE Confidence: 0.841703712940216

00:56:40.774 --> 00:56:41.560 answer right now.  
NOTE Confidence: 0.841703712940216

00:56:41.560 --> 00:56:42.580 Is chemotherapy 'cause that  
NOTE Confidence: 0.841703712940216

00:56:42.580 --> 00:56:44.110 doesn't really care so much about  
NOTE Confidence: 0.841703712940216

00:56:44.152 --> 00:56:45.487 what the resistance pathway was,  
NOTE Confidence: 0.841703712940216

00:56:45.490 --> 00:56:47.597 but it gets back to Sarah's question  
NOTE Confidence: 0.841703712940216

00:56:47.597 --> 00:56:49.278 that eventually we've got to figure  
NOTE Confidence: 0.841703712940216

00:56:49.278 --> 00:56:50.951 out how to get the immune system  
NOTE Confidence: 0.841703712940216

00:56:51.008 --> 00:56:52.646 to be able to recognize the cancer  
NOTE Confidence: 0.841703712940216

00:56:52.646 --> 00:56:54.181 and all of its various iterations.  
NOTE Confidence: 0.841703712940216

00:56:54.181 --> 00:56:55.566 As it becomes more resistant  
NOTE Confidence: 0.841703712940216

00:56:55.566 --> 00:56:57.017 and be able to tackle it.  
NOTE Confidence: 0.841703712940216

00:56:57.020 --> 00:56:58.889 I don't have an answer as to  
NOTE Confidence: 0.841703712940216

00:56:58.889 --> 00:57:00.418 how we're going to do that,

NOTE Confidence: 0.841703712940216

00:57:00.420 --> 00:57:02.373 but to me that's really the only

NOTE Confidence: 0.841703712940216

00:57:02.373 --> 00:57:04.348 way we're really going to get at it,

NOTE Confidence: 0.841703712940216

00:57:04.350 --> 00:57:05.868 because were to get it early

NOTE Confidence: 0.841703712940216

00:57:05.868 --> 00:57:07.736 enough that it hasn't had time to

NOTE Confidence: 0.841703712940216

00:57:07.736 --> 00:57:09.066 develop all of the resistance,

NOTE Confidence: 0.841703712940216

00:57:09.070 --> 00:57:10.194 and that's where the.

NOTE Confidence: 0.841703712940216

00:57:10.194 --> 00:57:11.880 Earlier stage therapy is helpful so,

NOTE Confidence: 0.841703712940216

00:57:11.880 --> 00:57:13.936 but even there I think that I don't

NOTE Confidence: 0.841703712940216

00:57:13.936 --> 00:57:16.059 know that we're going to cure with

NOTE Confidence: 0.841703712940216

00:57:16.059 --> 00:57:17.960 that approach because I think that

NOTE Confidence: 0.841703712940216

00:57:17.960 --> 00:57:20.336 it only takes a few cells that become

NOTE Confidence: 0.841703712940216

00:57:20.336 --> 00:57:22.100 resistant to then grow up again,

NOTE Confidence: 0.841703712940216

00:57:22.100 --> 00:57:24.660 and so I think we've all got a lot of

NOTE Confidence: 0.841703712940216

00:57:24.730 --> 00:57:27.162 years left of work that we need to

NOTE Confidence: 0.841703712940216

00:57:27.162 --> 00:57:29.986 get doing to be able to make the impacts.

NOTE Confidence: 0.841703712940216

00:57:29.990 --> 00:57:31.150 We'd like to make.  
NOTE Confidence: 0.847847104072571

00:57:31.750 --> 00:57:33.690 Right, and certainly by working  
NOTE Confidence: 0.847847104072571

00:57:33.690 --> 00:57:35.630 through the cooperative groups and  
NOTE Confidence: 0.847847104072571

00:57:35.689 --> 00:57:37.569 the societies and collaborating.  
NOTE Confidence: 0.847847104072571

00:57:37.570 --> 00:57:40.066 Given that this is a worldwide  
NOTE Confidence: 0.847847104072571

00:57:40.066 --> 00:57:41.314 disease so important.  
NOTE Confidence: 0.847847104072571

00:57:41.320 --> 00:57:43.120 We I don't see too many  
NOTE Confidence: 0.847847104072571

00:57:43.120 --> 00:57:44.730 more questions in the chat,  
NOTE Confidence: 0.847847104072571

00:57:44.730 --> 00:57:47.097 just about the end of the hour I see  
NOTE Confidence: 0.847847104072571

00:57:47.097 --> 00:57:49.502 Nancy nearing joined and I just want  
NOTE Confidence: 0.847847104072571

00:57:49.502 --> 00:57:51.872 to acknowledge her Johns wife and I'm  
NOTE Confidence: 0.847847104072571

00:57:51.872 --> 00:57:54.021 sorry we can't talk in person Nancy,  
NOTE Confidence: 0.847847104072571

00:57:54.030 --> 00:57:55.992 but next year hopefully will see  
NOTE Confidence: 0.847847104072571

00:57:55.992 --> 00:57:58.368 you in the front row and we can.  
NOTE Confidence: 0.847847104072571

00:57:58.370 --> 00:58:00.926 Zoomed Heather inferred picture but Curly  
NOTE Confidence: 0.847847104072571

00:58:00.926 --> 00:58:03.639 any any final thoughts before we end?

NOTE Confidence: 0.847847104072571

00:58:03.640 --> 00:58:06.070 No, there was a fantastic talk.

NOTE Confidence: 0.847847104072571

00:58:06.070 --> 00:58:08.380 I mean, get really outlines the

NOTE Confidence: 0.847847104072571

00:58:08.380 --> 00:58:10.930 but so exciting in lung cancer,

NOTE Confidence: 0.847847104072571

00:58:10.930 --> 00:58:12.975 both with respect to targeted

NOTE Confidence: 0.847847104072571

00:58:12.975 --> 00:58:14.611 therapies an hopefully integrating

NOTE Confidence: 0.847847104072571

00:58:14.611 --> 00:58:16.190 IO with these things.

NOTE Confidence: 0.847847104072571

00:58:16.190 --> 00:58:16.706 Overtime.

NOTE Confidence: 0.847847104072571

00:58:16.706 --> 00:58:20.318 So thank you is really powerful work.

NOTE Confidence: 0.847847104072571

00:58:20.320 --> 00:58:22.330 And thanks for taking the time.

NOTE Confidence: 0.847847104072571

00:58:22.330 --> 00:58:24.010 Thanks to everyone who joined.

NOTE Confidence: 0.847847104072571

00:58:24.010 --> 00:58:26.348 We had a very large crowd today,

NOTE Confidence: 0.847847104072571

00:58:26.350 --> 00:58:28.674 both because of you Heather and because

NOTE Confidence: 0.847847104072571

00:58:28.674 --> 00:58:31.152 of John and we remember him fondly

NOTE Confidence: 0.847847104072571

00:58:31.152 --> 00:58:33.639 and in his memory will continue to

NOTE Confidence: 0.847847104072571

00:58:33.639 --> 00:58:35.781 take good care of our patients and

NOTE Confidence: 0.847847104072571



00:58:35.781 --> 00:58:37.740 which was always number one goal

NOTE Confidence: 0.847847104072571

00:58:37.740 --> 00:58:39.415 with the most innovative therapies.

NOTE Confidence: 0.847847104072571

00:58:39.420 --> 00:58:41.430 Which is exactly what both are.

NOTE Confidence: 0.847847104072571

00:58:41.430 --> 00:58:43.140 Cancer centers are trying to

NOTE Confidence: 0.847847104072571

00:58:43.140 --> 00:58:45.110 do so thank you everyone and

NOTE Confidence: 0.838841021060944

00:58:45.110 --> 00:58:46.805 see you soon. Thank you.