00:00:00.000 --> 00:00:02.325 Soon my name is Mara, Gulshan here at Yale University, Yale Cancer Center, Smilow Cancer Hospital.

00:00:02.325 --> 00:00:04.650 Welcome you to the third breast CME lecture series.

00:00:12.690 --> 00:00:15.567 This today we’re really fortunate to have three phenomenal speakers and panelists. We’re going to start with

00:00:15.567 --> 00:00:17.730 Doctor Regina Hooley, who’s professor of Radiology vice chair

00:00:21.090 --> 00:00:23.544 in the Department of Radiology in the interim as division Chief for breast imaging,

00:00:29.490 --> 00:00:32.850 and then we go to Doctor Kristen Knowlton,
our medical director for Radiation Oncology at Yale at Hamden, and then last but certainly not least, Doctor Tomer Abraham, who is our director of breasts. Microsurgical reconstruction and breast reconstruction here at Yale. The format is that will have three consecutive speakers. I really encourage you to put as many questions as you want into the chat box or the question to answer. Box will try to answer them as much as possible in real time. Some will leave two to the
end for discussion,

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and with that I really appreciate everyone

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taking the time to log in and listen.

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This is going to be recorded

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so you can go back.

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If you want or share this with

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friends and colleagues around the

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country and around the world,

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so with no further ado,

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we'll turn it over to doctor Doctor Hooley.

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OK, thanks so much doctor Golshan.

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It's really great to be here,

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so I'm going to start by sharing my

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slides and let me just get this.

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Uhm? Why OK? So?

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I'm going to talk a little bit about
breast cancer screening and, you know,

There’s we’re moving towards a

My disclosures I am on the Medical

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That’s a website that has a lot

That’s a website that has a lot

That’s accurate and it’s for

That’s accurate and it’s for

patients as well as providers.
So I'll start by reviewing the background breast cancer course. Worldwide is the most common cancer in women. It accounts for about 1/4 of all female cancers. Is the leading cause of cancer related mortality worldwide? About 15% of all female cancer deaths in the US. Lung cancer is number one for cancer related mortality, and interestingly, the rates of breast cancer is rising worldwide at about 6.4% per year. Nobody really knows why, but that adds up.
The World Health Organization reports that in 2018 there were 2,000,000 cases of breast cancer diagnosed worldwide, and by 2040 that’ll rise to 3,000,000, so it is significant.

In general, the incidence of breast cancer is more frequent in developed countries, as noted on the blue map on the left, and this is likely due to screening mammography.

However, women diagnosed in developing countries, as noted on the map on the right,
are more likely to be diagnosed at an advanced age and are more likely to die from the disease. And maybe this is because there is pretends not to be formalized. Breast cancer screening in these developing countries. When it comes to breast cancer screening and mammography, we’ve certainly come a long way. Screening and mammography was first introduced, probably in the 1960s, and this is a paper from 1967 showing the new technology. At the time there was film screen,
mammography, and zero mammography as well. Pretty basic stuff that, compared to our standards today. But even those studies were able to show some cancers. Of these days, of course, Thomas synthesis or the 3D mammogram digital breast tomosynthesis is becoming the standard of care where we can see explicit detail of the breast tissue as well as. Small or or subtle cancers that are not well seen on the 2D traditional mammogram alone.
Our group at Yale was lucky to be one of the first centers in the United States to get tomosynthesis. I think it was back in 2011 and a few years after that we became fully all of our mammograms were tomosynthesis and we were leaders in publishing led by Doctor Leon Philpotts. And so showing that tomosynthesis is beneficial for screening and diagnosis of breast cancer among all women and among all ages. Some screening mammography has been shown to save lives, multiple randomized control trials, and observation.
ULL studies have shown that breast cancer mortality is increased by about 20 to 40%.

Is the only test that has been shown a clear mortality reduction of breast cancer, and this is mostly due to downshifting up stage two and hired a stage one.

There are fewer node negative. There are fewer negative invasive cancers, less tumor process, better tumor biology.

And among screening detected cancers and among clinically detected cancer is more than 50% are stage two or higher.

And here are some examples of some mammograms in women.
On the left hand side of the screen.

This is a 67 year old woman who had never had a screening mammogram.

She is a palpable 4 centimeter mass. It's Pirates 5. We know it's a cancer.

This was a triple negative, a high grade cancer and we would think that she would have, you know, regular screening. Agra fee.

We would have caught this at an earlier stage and smaller size. On the other hand, in this patient there's a tiny new group of calcifications there. Linear their branching.

She's 15-6 years old.
She has a screening mammogram every year, so they’re caught earlier, and this was a very tiny 1.5 millimeter grade, two cancer, High Ki 67. So presumably this is a life saving mammogram in this woman. So despite the success of mammography, it is imperfect, particularly limited in women with dense breasts. The overall false negative rate of mammography among all breast densities is about 10 to 15% in the overall sensitivity is 70 to 90% dense breasts make it hard for.
00:06:51.404 --> 00:06:53.369 us because of the masking effect
NOTE Confidence: 0.7707585
00:06:53.369 --> 00:06:55.840 where cancers tend to be white spot.
NOTE Confidence: 0.7707585
00:06:55.840 --> 00:06:57.814 So there can be difficult to see
NOTE Confidence: 0.7707585
00:06:57.814 --> 00:06:59.491 with the white fiber glandular
NOTE Confidence: 0.7707585
00:06:59.491 --> 00:07:01.795 tissue versus women with non dense
NOTE Confidence: 0.7707585
00:07:01.795 --> 00:07:03.907 breasts where there’s more fat and
NOTE Confidence: 0.7707585
00:07:03.907 --> 00:07:05.507 less white gland or tissue.
NOTE Confidence: 0.7707585
00:07:05.510 --> 00:07:08.756 And cancers are easier to identify.
NOTE Confidence: 0.7707585
00:07:08.760 --> 00:07:10.510 So screening mammography is very
NOTE Confidence: 0.7707585
00:07:10.510 --> 00:07:11.315 controversial, controversial.
NOTE Confidence: 0.7707585
00:07:11.315 --> 00:07:14.500 I think we all know that our
NOTE Confidence: 0.7707585
00:07:14.500 --> 00:07:17.018 patients know that it’s hard to
NOTE Confidence: 0.7707585
00:07:17.018 --> 00:07:18.923 miss the articles in the.
NOTE Confidence: 0.7707585
00:07:18.930 --> 00:07:21.378 And in the press.
NOTE Confidence: 0.7707585
00:07:21.380 --> 00:07:24.098 Over the past decade or so,
NOTE Confidence: 0.7707585
00:07:24.100 --> 00:07:26.830 and screening has become more complicated,
and this step partially because of the United States Protective Services Task Force, who first issued recommendations on screening mammography in 2009 and then reinstated them again, didn’t change them. Basically, in 2015 and basically gave screening mammography, AB, and even a C rating. They basically said that having a annual screening mammogram and women in there. 40S was a C grade, meaning that this service might be. Offered in selected patients.
Depending on some circumstances and then gave screening mammography every two years from age 50 to 74 AB grade and you know when we’re in medicine, we generally like A’s that we should but you know Decencies and also the changing recommendations didn’t recommend against screening mammogram of women in their 40s. They also recommended against teaching self breast examination they were against. There were against screening women over...
the age of 75 and they were really only for screening women every other year in the starting age 50 to 74. This is very controversial. Patient advocacy groups primary care, oncology, radiology. Perhaps? It was really just about saving money, because it’s certainly the less we screen, the more money we’re going to save on healthcare dollars. And in all fairness. These recommendations are very similar to other countries that have nationalized health services and health programs, but we don’t have that.
here in the United States.

So saying that this is what we should do in a country that doesn’t have a full National Health Service doesn’t seem to be fair,

and not mentioning that at all doesn’t seem fair.

I do want to focus on the fact that we really should be screening women in their 40s, and if there’s one thing that you should take away for anyone who doesn’t believe in screening women in their 40s, we need to screen women in their 40s every year. So, so please take, you know,
Women in their 40s have higher interval cancer rates. They have denser breasts. We know that interval cancers that are diagnosed between having a normal mammogram are usually symptomatic. Cancers tend to be more aggressive. Cancers in women have a shorter sojourn time, and they tend to be faster growing. We also know that. There’s higher survival for earlier stage tumors, and, importantly, there’s ethnic differences. Black and Hispanic women have a peak incidence of breast cancer in ages 46 to 47.
so telling having a sweeping statement that says, you know we should only start screening at age 50 is really doing these patients a major disservice. Here this graph shows that you know breast cancer in the 40s, accounts for about 20% of all invasive breast cancer, so it is a considerable fraction of the disease burden. So it is very important. So the screening guidelines, as they stand now.
looks kind of confusing in this table, but it’s pretty. Think it’s really pretty straightforward. Basically, most organizations say you should start at age 40, with the exception of the task force were offer it. So again, this this reflects the patient shared decision making with ACOG and the American Cancer Society has the option also discharge date page 40 and says really start annual screening at age 45, so the American Cancer Society sort of
bridge the gap between societies like the American College of Radiology. And the United States Protective Services Task force.

Life expectancy is a little bit all over the place. I'm not so sure something magical happens at age 75. Life expectancy is a little bit all over the place. I think it's better to limit screening when life expectancy is less than 10 years, because we know these patients are not going to really benefit as much from early detection. So we have healthy patients who might be 76 years old and they
00:11:51.286 --> 00:11:53.046 should still have a mammogram,
00:11:53.050 --> 00:11:54.850 perhaps, maybe not annually.
00:11:54.850 --> 00:11:57.100 Perhaps we can even consider
00:11:57.100 --> 00:11:58.837 every one to two years.
00:11:58.840 --> 00:12:00.723 And then we have patients who might
00:12:00.723 --> 00:12:03.128 be 70 or 69 years old or whatever,
00:12:03.130 --> 00:12:04.434 or not that healthy.
00:12:04.434 --> 00:12:06.064 And maybe don’t need to
00:12:06.064 --> 00:12:07.787 have a mammogram as well.
00:12:07.790 --> 00:12:10.654 And again, as far as the interval goes,
00:12:10.660 --> 00:12:12.416 most people say annually,
00:12:12.416 --> 00:12:15.549 maybe every one to two years the
00:12:15.549 --> 00:12:18.033 the task force being the extreme
00:12:18.033 --> 00:12:20.259 of every every other year.
00:12:20.260 --> 00:12:22.600 So in addition to the variable
mammographic screening recommendations,

NOTE Confidence: 0.86362046

supplemental screening is also an

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option for many of our patients.

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This includes ultrasounds and MRI.

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There's also newer technologies

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such as molecular breast imaging

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and contrast enhanced memo that are

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really investigational at this time,

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but they are on the verge of being

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offered outside of the screening trials.

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There are limited screening

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trials that are going on.

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So these tools are right around the corner.

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I believe for more widespread use,

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widespread clinical use,

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but I'm only going to review
screening ultrasound and MRI today because of the time constraints. So breast ultrasound screening is linked to death dense breast notification laws. We do a lot of breast ultrasound screening in Connecticut because we were the first state to have a breast density notification law which was passed in 2009. Coincidentally the same month that the United States Protective Services Task Force told us that we should stop screening women in their 40s and then we have the Connecticut State saying that we...
00:13:22.575 --> 00:13:24.500 should be offering patients with
NOTE Confidence: 0.86362046
NOTE Confidence: 0.86362046
00:13:26.690 --> 00:13:27.902 The restless notification.
NOTE Confidence: 0.86362046
00:13:27.902 --> 00:13:29.518 Just as an aside,
NOTE Confidence: 0.86362046
00:13:29.520 --> 00:13:30.892 has become quite popular,
NOTE Confidence: 0.86362046
00:13:30.892 --> 00:13:33.962 I think over 30 states in the United
NOTE Confidence: 0.86362046
00:13:33.962 --> 00:13:36.788 States have breast density notification laws.
NOTE Confidence: 0.86362046
00:13:36.790 --> 00:13:39.289 There are countries in Europe and South
NOTE Confidence: 0.86362046
00:13:39.289 --> 00:13:41.640 America that are considering breast.
NOTE Confidence: 0.80421704
00:13:44.200 --> 00:13:48.460 Density notification guidelines as well.
NOTE Confidence: 0.80421704
00:13:48.460 --> 00:13:50.630 And women with dense breasts do benefit
NOTE Confidence: 0.80421704
00:13:50.630 --> 00:13:52.849 from having a screening ultrasound.
NOTE Confidence: 0.80421704
00:13:52.850 --> 00:13:55.258 Overall, the cancer detection rate is about
NOTE Confidence: 0.80421704
00:13:55.258 --> 00:13:57.977 two to four per thousand women screen.
NOTE Confidence: 0.80421704
00:13:57.980 --> 00:14:00.129 This is in addition to the approximate
NOTE Confidence: 0.80421704
00:14:00.129 --> 00:14:02.018 5 cancers per thousand women
NOTE Confidence: 0.80421704
00:14:02.018 --> 00:14:03.830 screen detected on mammography.
NOTE Confidence: 0.80421704
00:14:03.830 --> 00:14:06.616 We know that most cancers detected on screening ultrasound are small and node negative and tend to be early stage,
NOTE Confidence: 0.80421704
00:14:08.856 --> 00:14:11.145 so it’s rational to think that finding these mammographic Leopold cancers at an early stage in smaller size will improve overall mortality.
NOTE Confidence: 0.80421704
00:14:11.150 --> 00:14:13.796 Ultrasound screening is really widely accepted by our patients.
NOTE Confidence: 0.80421704
00:14:13.796 --> 00:14:15.560 It’s relatively inexpensive.
NOTE Confidence: 0.80421704
00:14:15.637 --> 00:14:18.206 Ultrasound screening is really well accepted by our patients.
NOTE Confidence: 0.80421704
00:14:18.206 --> 00:14:20.600 It costs about the same price as a mammogram.
NOTE Confidence: 0.80421704
00:14:20.600 --> 00:14:22.068 There’s no Ivy contrast.
NOTE Confidence: 0.80421704
00:14:22.068 --> 00:14:23.903 There’s no compression.
NOTE Confidence: 0.80421704
00:14:23.910 --> 00:14:25.002 It’s widely available, so it can work.
Which is why we offer it to our patients. It also performs very well in women with dense breast tissue before the mammogram is limited, and that’s because of the contrast on ultrasound. These small cancers on ultrasound tend to be dark or hypoechoic, and dense breast tissue tends to look echogenic or white on the ultrasound, so we can see these little cancers that are draped in the glandular tissue fairly well and they will be mammographic. Leah called because they’re just hiding behind this glandular tissue as well. Breast density is also important,
so I just want to review this briefly because most of our more personalized community in the direction that we're going to go to is going to include breast density as a factor in what kind of screening patients should get. breast dense breasts is very common. It’s seen in about 50% of all women in the United States. We know there’s an increased risk of breast cancer in women. It’s a 2/6 times increased risk, and it can be confusing. When you see what they did, you know two times increased risk and
then we’ll see another article that says four to six times increase risk, and that’s because it really depends on what breast density category you’re comparing. So if you compare women with extremely dense breasts with women with fatty tissue, then the increased risk of developing breast cancer for women with extremely dense breasts is 4 to 6 times higher than the women with fatty breasts. However, that’s the minority of our patients in the United States. Only about 10% of women have extremely dense breast tissue and only about
10% of women have fatty tissue.

So 80% of our patients have heterogeneously dense breasts or scattered fibroglandular tissue.

And so if you compare women with heterogeneously dense breasts with fatty with scattered fibroglandular, then you have only about two times increase risk.

It is considered however, an intermediate risk factor for breast cancer. It limits the mammogram.

There are higher interval cancer
rates and worse prognosis for these clinically detected cancers. So that’s why breast density is important and it can only be diagnosed on a mammogram. It can be diagnosed based on a breast exam and if the patient’s breast exam is sort of lumpy and difficult to do. Another option for women with dense breasts is fast MRI screening. It has been proposed for average risk. Women with dense breasts. It is been being done clinically in other parts of the country. There’s very little of it done in Connecticut, but for example,
University of Pennsylvania does a lot of fast, summarized meeting for women with dense breasts. The first study was published back in 2014 by Christiana Cool. She’s a highly regarded radiologist in Germany and she showed that with a very fast acquisition time of three minutes, as opposed to about the the acquisition time or scanning time of a traditional MRI, which is about 10 or 15 minutes. We could detect cancers at a very high rate of 18 per thousand, and this has been replicated by other studies as well.
So overall, the cancer detection rate of MRI's about 15 to 18 per thousand, which is higher than screening ultrasound. That supplemental yield is only about two to four per thousand. But MRI is more expensive and requires Ivy contrast. There’s not a lot of MRI scanners out there as opposed to ultrasound, so it’s not as easy to perform. Patients may not like it as well. Takes longer, but it does work. The two year validation showed there were no interval cancers so it was
NOTE Confidence: 0.81505984
00:18:22.378 --> 00:18:23.988 really catching all those cancers.
NOTE Confidence: 0.81505984
00:18:23.990 --> 00:18:25.685 The sense the negative predicted
NOTE Confidence: 0.81505984
00:18:25.685 --> 00:18:27.867 value was high and the specificity
NOTE Confidence: 0.81505984
00:18:27.867 --> 00:18:29.567 and positive positive predictive
NOTE Confidence: 0.81505984
00:18:29.567 --> 00:18:32.249 value are also very good as well.
NOTE Confidence: 0.81505984
00:18:32.250 --> 00:18:34.226 So here is a 61 year old patient
NOTE Confidence: 0.81505984
00:18:34.226 --> 00:18:36.172 with a pathogenic BRACA mutation
NOTE Confidence: 0.81505984
00:18:36.172 --> 00:18:38.482 and Paris producting something over
NOTE Confidence: 0.81505984
00:18:38.482 --> 00:18:40.810 ectomy with a negative mammogram,
NOTE Confidence: 0.81505984
00:18:40.810 --> 00:18:43.402 and she had a MRI six months later
NOTE Confidence: 0.81505984
00:18:43.402 --> 00:18:46.007 and they saw this little cancer and
NOTE Confidence: 0.81505984
00:18:46.007 --> 00:18:49.178 detected this so it can work in women
NOTE Confidence: 0.81505984
00:18:49.178 --> 00:18:51.590 with dense breasts and this woman.
NOTE Confidence: 0.81505984
00:18:51.590 --> 00:18:54.278 She also had high risk and which is
NOTE Confidence: 0.81505984
00:18:54.278 --> 00:18:57.486 where we do most of our breast MRI in
NOTE Confidence: 0.81505984

34
our practices for high risk screening.

and that’s traditional.

I was screening MRI for high risk patients.

Here's the list there Braca positive patients they have some of these syndromes may have chest radiation,

usually eight years earlier,

part age 30,

an overall lifetime risk of greater than 20% high risk women.

We recommend that they have an annual mammmogram and MRI beginning around age 25 to 30 and again this is the BRACA positive patients and another high risk patients and this is recommended by the American College of Radiology
and the American Cancer Society.

We also know that it’s reasonable to delay the onset of mammographic screening until the age of 30.

In some of these patients, and that’s because of the radiation risk.

These patients are known to have increased radiation sensitivity, particularly the BRACA one carriers and the P53 carriers, as well.

So breast cancer risk evaluation is a growing program.

Most more and more breast centers today are offering breast cancer risk assessment.

This is in lieu in in coordination
We're doing more screening not only for breast cancer, but colon, cancer, and other cancers as well. So with breast cancer risk evaluation, there are multiple risk assessment tools that are very available online and the estimated risk can really vary depending on which model you use. Most centers are going for the tire acoustic model that’s most widely used and that also incorporates breast density into that model. When we think about breast cancer risk, we have to know that risk changes overtime.
For example, you can have a patient who is just an average risk and then her sister was diagnosed with breast cancer at age 39. That’s going to bump up her risk for breast cancer the following year and overtime the lifetime risk increases but the five and 10 year breast cancer risk is also proportional to age, so it’s complicated and that’s something that I think most breast centers, including our own will be doing within the next 5 to 10 years.
so we’re really moving beyond just starting at age 40 and having a mammogram every year, which is nice and simple, and it’s nice for you know, buzzwords and things like that, which looks really complicated, but it’s really not that complicated, so let me just review with you. so the first question is, does the patient have at least a 10 year life expectancy? If not, then she would only have breast imaging is then there’s a clinically suspicious finding.
The majority of our patients will have a 10 year life expectancy and then we ask, is she under the age of 25? A 75? If not, she’s over age 75 with healthy then maybe she would have an annual mammogram. Most of our patients are going to be under the age of 75 and then we’re going to look at the wrist and we’re going to recommend an annual contrast enhanced MRI beginning at age 25 or 30 and
mammography beginning at age 30, she can't have an MRI because it's she can tolerate it or for whatever reason. Then she would have an annual screening ultrasound in addition to her mammogram. The majority of our patients that we are not going to be increased risk and so then we want to be sure. That they are under the age of over the age of 40. If they’re not over the age of four. If they’re not over the age of 40, and we would just tell them to start really screening at 40 at 40, we do the baseline mammogram. Of course,
we always want to synthesis if it’s available, and if she has dense breast tissue, then we would also offer them screening ultrasound or at some places screening MRI as well. So that’s the algorithm where it stands today.

What about the future? There are going to be more screening options. We’re going to have advancing knowledge of genetics so it will be better risk assessment and more personalized medicine will have new technology. As I mentioned, molecular breast imaging,
contrast enhanced mammography,
and of course AI will be more patient,
shared decision making.
We’re going to be talking more patience
and helping them filter information,
medical information and guide
their decisions.
And of course, health.
Health care economics is going to play a
part in how we screen our patients as well.
And what makes the most sense?
Briefly, I’m just going to
touch on overdiagnosis.
I know that there’s some people probably
listening and thinking we shouldn’t
screen so much because of overdiagnosis.
Could talk entire day about overdiagnosis, but I’ve condensed it into two slides, and here’s an example of a case of overdiagnosis of 59 year old. She had a mass president or left outer breast stable for five years. It looks just like a little lymph node. We do tomosynthesis the first time she has atomo exam, and there’s little speculations. And this turns out to be a great two tubular. My cancer probably would have done anything. It’s a low grade cancer and so perhaps this is a true case of overdiagnosis. We know that some screening detected cancers.
00:24:28.142 --> 00:24:30.440 may never become clinically evident.
NOTE Confidence: 0.8122481
00:24:30.440 --> 00:24:32.582 They grow very slowly with patients
NOTE Confidence: 0.8122481
00:24:32.582 --> 00:24:35.053 that die of something else before
cancer becomes symptomatic.
NOTE Confidence: 0.8122481
00:24:35.053 --> 00:24:36.520 This example would be low grade
NOTE Confidence: 0.8122481
00:24:38.782 --> 00:24:40.970 DCIS in an elderly patient.
NOTE Confidence: 0.8122481
00:24:40.970 --> 00:24:43.986 We might over treat these patients and give
him and subject them to potential harm.
NOTE Confidence: 0.8122481
00:24:47.120 --> 00:24:48.856 But the key is we don’t know yet
NOTE Confidence: 0.8122481
00:24:48.856 --> 00:24:50.670 which low grade cancers will become
NOTE Confidence: 0.8122481
00:24:50.670 --> 00:24:52.656 lethal and when they’ll become lethal,
NOTE Confidence: 0.8122481
00:24:52.660 --> 00:24:54.895 and so hopefully more research
NOTE Confidence: 0.8122481
00:24:54.895 --> 00:24:56.683 will be able to.
NOTE Confidence: 0.8122481
00:24:56.690 --> 00:24:58.842 To identify these cancers so that we’ll know
NOTE Confidence: 0.8122481
00:24:58.842 --> 00:25:00.847 more where we need to really treat them.
NOTE Confidence: 0.8122481
00:25:00.850 --> 00:25:04.706 Where we can stand back a little bit.
AI tools and population health and new technology are going to allow us to screen smarter. We're going to know who needs more and who needs less screening, but it's going to take a lot of outcome analysis and sufficient data right now. Our data collection is not that great. Most of the cancer registries that collect information on cancer. Breast cancer. Do not look at the method of detection so we don't know how these cancers are being diagnosed, whether they are palpable or whether they had to mow.
or whether they were diagnosed on screening ultrasound or MRI. So the American College of Radiology is working to include method of detection in the BI RADS and then when we do that, hopefully the cancer registries and the national databases will accept this so that we can collect information on new technology and figure out what works and what doesn’t. So in summary, annual screening mammogram beginning at age 40 saves the most lives. Women with dense breasts have the option to choose supplemental screening ultrasound or MRI.
high risk women benefit from annual MRI in addition to screening mammography. Often this will start before the age of 40 and just one key. If a patient is having a supplement, an MRI in addition to our mammogram, she really doesn’t need a screening ultrasound as well. We know in the future, vascular based imaging will become more common. It’s interesting vascular based imaging may not necessarily require Ivy contrast routine breast cancer risk assessment will probably be
available to all women and artificial intelligence will definitely enhance the delivery of breast cancer screening at multiple levels. From effective efficient scheduling to managing and analyzing new data to helping the radiologist read better and faster and more accurately, and also again help us determine who needs what when so that we can really serve our patients very well. So I want to thank you for your time and attention and will be available for questions later. Thanks, thank you Doctor Holy.
NOTE Confidence: 0.8576684
00:27:09.910 --> 00:27:11.600 was fantastic. I mean honestly,
NOTE Confidence: 0.8576684
00:27:11.600 --> 00:27:13.812 the the amount of work that the
NOTE Confidence: 0.8576684
00:27:13.812 --> 00:27:15.166 our breast imaging colleagues
NOTE Confidence: 0.8576684
00:27:15.166 --> 00:27:17.511 and yuan in our group and others
NOTE Confidence: 0.8576684
00:27:17.511 --> 00:27:19.709 have done is is truly remarkable.
NOTE Confidence: 0.8576684
00:27:19.710 --> 00:27:22.552 And there’s just so much new excitement
NOTE Confidence: 0.8576684
00:27:22.552 --> 00:27:25.614 in the pipeline and kind of figuring out
NOTE Confidence: 0.8576684
00:27:25.614 --> 00:27:28.789 what the next steps are going to be great.
NOTE Confidence: 0.8576684
00:27:28.790 --> 00:27:32.080 Next, move on to Doctor Knowlton to
NOTE Confidence: 0.8576684
00:27:32.080 --> 00:27:35.925 discuss some of the recent changes and
NOTE Confidence: 0.8576684
00:27:35.925 --> 00:27:38.845 advances in radiation therapy and.
NOTE Confidence: 0.8576684
00:27:38.850 --> 00:27:40.250 The floor is all yours.
NOTE Confidence: 0.7904694
00:27:46.440 --> 00:27:48.310 Hope you’re on mute still.
NOTE Confidence: 0.8589882
00:28:18.350 --> 00:28:20.403 So while we’re waiting
NOTE Confidence: 0.8589882
00:28:20.403 --> 00:28:23.769 for the slides to pop up.
NOTE Confidence: 0.8589882
Regina, what are your thoughts on how to screen an elderly woman after an index cancer? For example, an 85 year old with a newly diagnosed breast cancer after treatment, does she need follow up imaging? This is from Doctor Berger. Really great question. Yeah so generally women you know around 85 or 86 their life expectancy is probably around six or seven years where the benefit of early detection probably is not useful. That said, I think it really depends on how healthy the patient is, maybe she still likes having a mammogram.
00:28:58.668 --> 00:29:00.958 love these older ladies of her healthy.

00:29:00.960 --> 00:29:03.424 They still want to come in and get

00:29:03.424 --> 00:29:05.519 their mammogram maybe every other year.

00:29:05.520 --> 00:29:07.150 I just wouldn’t push it,

00:29:07.150 --> 00:29:09.439 but there is still some shared decision

00:29:09.440 --> 00:29:11.070 making there got it excellent.

00:29:13.680 --> 00:29:16.585 Hopefully you see my slides properly now.

00:29:16.590 --> 00:29:18.802 Looks great. OK, great, thank you.

00:29:18.802 --> 00:29:22.084 So my title is as you can see is

00:29:22.084 --> 00:29:23.952 deescalation of radiation therapy


00:29:26.960 --> 00:29:28.620 At less is more.

00:29:31.770 --> 00:29:34.713 OK so I have no conflict of interest to

00:29:34.713 --> 00:29:37.667 report related to this presentation an any.

00:29:37.670 --> 00:29:40.478 I do not unfortunately have as many awesome
pictures as our two other presenters.

However, any pictures that were used here were taken from sites that allow use of their photos in this setting.

So when I after the title was submitted, you know D escalation in the setting of, you know, radiation therapy in the setting of breast cancer.

I actually looked up the word deescalation and I think maybe my title is not grammatically correct because Merriam Webster Dictionary does not say that this is a noun in anyway and I tried hard copy and online.

It is a will say that it is a verb that can mean to limit to decrease in extent.
Are to decrease in volume or scope. I was able to find a definition for the noun in the free dictionary, which is a reduction in intensity. So if we have any people that are very much on top of their grammar and my title may not be correct, I will say however that the title is more in the spirit of the Marian Webster. Definition where we are in the modern era, aiming to limit the radiation limit, the number of fractions limit the dose that they treatment volumes and also omit radiation when necessary. Really the free dictionary definition.
00:31:01.080 --> 00:31:03.520 doesn’t make sense because we’re
NOTE Confidence: 0.8602074
00:31:03.598 --> 00:31:05.823 not really reducing the intensity
NOTE Confidence: 0.8602074
00:31:05.823 --> 00:31:07.158 of the radiation.
NOTE Confidence: 0.8602074
00:31:07.160 --> 00:31:10.616 What we do when we are changing the
NOTE Confidence: 0.8602074
00:31:10.616 --> 00:31:12.970 fractionation to a shorter fractionation
NOTE Confidence: 0.8602074
00:31:12.970 --> 00:31:17.150 is we are using newer schemes of radiation.
NOTE Confidence: 0.8602074
00:31:17.150 --> 00:31:18.770 To deliver the same biological
NOTE Confidence: 0.8602074
00:31:18.770 --> 00:31:21.628 effective dose so I do not feel that
NOTE Confidence: 0.8602074
00:31:21.628 --> 00:31:23.583 the free dictionary definition really
NOTE Confidence: 0.8602074
00:31:23.583 --> 00:31:25.839 beats what’s happening in radiation.
NOTE Confidence: 0.8602074
00:31:25.840 --> 00:31:29.050 But the Marian Webster one does.
NOTE Confidence: 0.8602074
00:31:29.050 --> 00:31:32.610 So here we see, this is how we are D.
NOTE Confidence: 0.8602074
00:31:32.610 --> 00:31:34.494 Escalating as I had mentioned with
NOTE Confidence: 0.8602074
00:31:34.494 --> 00:31:36.479 the decrease in number of fractions
NOTE Confidence: 0.8602074
00:31:36.479 --> 00:31:38.495 decrease in volume of tissue treated
NOTE Confidence: 0.8602074
00:31:38.495 --> 00:31:40.547 an omission of radiation therapy
NOTE Confidence: 0.8602074
00:31:40.547 --> 00:31:41.870 for appropriate candidates.
NOTE Confidence: 0.8602074
00:31:41.870 --> 00:31:43.907 And this really does fit the less
NOTE Confidence: 0.8602074
00:31:43.907 --> 00:31:46.528 is more if we have less radiation
NOTE Confidence: 0.8602074
00:31:46.528 --> 00:31:48.623 we will have increased compliance.
NOTE Confidence: 0.8602074
00:31:48.630 --> 00:31:50.838 People will have if the fractionation
NOTE Confidence: 0.8602074
00:31:50.838 --> 00:31:52.900 scheme is more convenient for them,
NOTE Confidence: 0.8602074
00:31:52.900 --> 00:31:54.680 whether they have traveled issues
NOTE Confidence: 0.8602074
00:31:54.680 --> 00:31:55.748 or working issues.
NOTE Confidence: 0.8602074
00:31:55.750 --> 00:31:58.042 We're going to have more patients
NOTE Confidence: 0.8602074
00:31:58.042 --> 00:32:01.150 that will be able to get it with less.
NOTE Confidence: 0.8602074
00:32:01.150 --> 00:32:03.285 Stress there will be increased
NOTE Confidence: 0.8602074
00:32:03.285 --> 00:32:05.420 acceptance of the treatment course
NOTE Confidence: 0.8602074
00:32:05.495 --> 00:32:07.625 increased time for patients to work
NOTE Confidence: 0.8602074
00:32:07.625 --> 00:32:10.280 or to pursue their hobbies or take
NOTE Confidence: 0.8602074
00:32:10.280 --> 00:32:12.608 care of their families and increase
NOTE Confidence: 0.8602074
quality of life.

So moderate fractionation is now really old news. At this point, we've all seen it. This is what it is now. Truly in the United States, the new standard of radiation therapy for the intact breast standard or conventional radiation to the whole breast. It was for several decades, 50 Gray and 25 fractions, meaning that the patient needed to come for five weeks. And then there would be an optional tumor bed boost of an additional 10 to 16 Gray and five to 8.
Actions which many women have received over the years, so that’s six to six and a half weeks of daily treatment. Moderate fractionation for whole breast irradiation therapy, which I’d like to stress in at this time is without including the nodes. This is the new standard where we where the whole breast is being treated in 40 grey and 15 fractions or 42.5 Gray and 16 fractions. That’s really institutional preference.
from the start B trial, and for these patients there’s an optional tumor bed boost 10 Gray and for fractions. So we’re taking the standard or conventional fractionation of five to six to six and a half weeks, and now it’s become three to four weeks for the patient. And of course there’s some data to back all of this up. These are the three largest trials that have the longest follow-up that are used to backup or support the use of moderate hypofractionation. All three trials to start a the start B, and.
There's no great name for this one.
The Canadian Ontario Wayland trial. Depending on who you're talking about.
I learned from this.
I need to have make sure that any trials I have have a catchy name.
They all compared their moderately hypofractionated regimens in whole breast radiation therapy to the standard conventional fractionation of welding.
I guess we're going to call that conventional 'cause modern hypo frack is now standard,
50 Gray in 25 fractions was the standard arm and all Childs found no significant difference in local recurrence and overall survival for the patients.

At 10 years they did all use a slightly different fractionation scheme to start. A trial, had had patients receiving 41.6 Gray or 39 Gray and 13 fractions over 5 weeks, which is approximately 3 fractions per week. It’s a little bit of. More challenging regimen to schedule, so most institutions are not really using this regiment, but it is interesting that they did.
Note that a significant decrease in the number of patients with breast induration. The 39 Gray arm compared to the standard frac. The 41.6 Gray arm did not do any better as far as acute effects. The 50 Gray arm as far as acute effects. An late term effects as that. Start B, which is what Yale is using. That’s the 50 Gray and 15 fractions. So once a day Monday through Friday, that’s three weeks. So once again their outcomes, local region of occurrence,
overall survival at 10 years

was the same with the 50 Gray, and there was a significant decrease in breast shrinkage, breast edema and telangiectasia.

But age is in the 40 great arm. The Canadian trial was interesting. That is slightly different.

42.5 in 16 fractions, so that’s three weeks and a day.

Subgroup analysis it’s worthy

of note that they did notice increased local regional recurrence.

In high grade tumors, with the Hypo frac with 15.6% of patients who received with high...
grade tumors that had hypo fact
experience in local regional recurrence versus 4.7 in the 50 Gray arm.
However, I will say that start B did look at that and did not find any difference in outcomes for the Grade 3 tumors, so we tend to still treat those patients with moderate hypofractionation in the Canadian trial, there was no significant difference in acute toxicity or cosmetic outcome. So maybe we can tighten things up a little bit more now and the newer
regimens that are being brought out

there are now called Ultra Hypofractionation.

And these once again are in for the setting of whole breast radiation only.

We are not yet talking about anything with the nodes.

And we have two regimens, the fast regimen and the

Yale has adopted the FAST regimen which we've been using with great success.

We've been very happy with it.

We started using it in the fall of last year, so in the fast trial.

Patients were randomized to one fraction of radiation per week to a total of
28.5 Gray or to a total of 30 Gray, so that’s 5.7 or 6 Gray once a week versus the more traditional 50 Gray in the 25 fractions. This fast trial is randomized.

It’s well done, and it has 10 years of follow up at this point, and there was no significant difference in normal tissue affects in the 28.5 by ARM compared to the standard fractionation. And that’s why I put that in. Read up there because that is really the arm that we are treating on in the 28.5 Gray arm.
increase in normal tissue effects,

so we’re not using that.

For all three dosing fractionation schemes,

however,

local regional recurrence,

distant recurrence,

and overall survival were equivalent,

and this regimen has made it

into the national guidelines.

Now the NCC N guidelines saying

that it may be considered for

patients greater than 50 years of

age with early stage breast cancer,

which they have defined as as

in that who do not require a boost,
they had a few sentences about how boosted.

Difficult in this setting and hasn’t been established,

but that’s really how we are approaching it at Yale.

If we have a patient with early stage cancer who does not require a boost,

and we’re not quite ready for patients as young as 50 with just such a short term follow-up of 10 years,

so we are tending to lean towards patients 65 and over.

Although if someone did have a a needed transportation need or something that still fit this requirement,
we would be open for that.

The Fast forward has not.

It is not yet widely adopted because the data is only going out for five years at this point and that is looking at 26 or 27 Gray in five fractions just Monday through Friday.

You’re done in a week versus the what’s now the more modern.

Then the modern standard hypo fractionation, 40 Gray, and in 15 fractions.

The five year data is promising.

It’s showing non inferiority and local control.

There are increased normal tissue
00:39:55.815 --> 00:39:58.090 affects with the 27 Gray arm.

00:39:58.090 --> 00:40:00.520 So overtime I think we’re going 

00:40:00.520 --> 00:40:03.268 to be very interesting to see what 

00:40:03.268 --> 00:40:05.368 happens with that 26 Gray arm. 

00:40:05.370 --> 00:40:07.668 And if we get more data, 

00:40:07.670 --> 00:40:10.344 more longer term data under our belt, 

00:40:10.350 --> 00:40:12.335 that may be something that 

00:40:12.335 --> 00:40:13.923 we will be adopting. 

00:40:13.930 --> 00:40:15.136 In the future, 

00:40:15.136 --> 00:40:17.548 that would certainly be very convenient. 

00:40:20.380 --> 00:40:23.425 So, so far we’ve only talked about 

00:40:23.425 --> 00:40:25.595 using the HYPOFRACTIONATION in settings 

00:40:25.595 --> 00:40:28.374 where just the breast is being treated. 

00:40:28.380 --> 00:40:30.906 What about in the setting of 

00:40:30.906 --> 00:40:32.590 regional nodal or radiation,
or post mastectomy radiation therapy?

There is a growing body of maturing data and accruing data in this setting that we may see in the future that we are more widely adopting. The hypo fractionation for these patients as well. One trial that’s ongoing right now is the RT charm trial. And it’s looking at moderately hypofractionated post mastectomy radiation therapy for patients who’ve had breast reconstruction comparing with the standard 50 Gray and patients can have autologous reconstruction implant reconstruction immediate
or delayed to be on this trial.

The fabric trial that is open at Yale Dr Mina Moran is RPI for that.

That’s the study of radiation fractionation on patient outcomes after breast reconstruction for invasive breast cancer, and this is randomized as well to hypofractionation.

For invasive breast cancer, this is randomized as well to hypofractionation.

And this would have patience for this.

Permanent implant or tissue expander.

This is not for autologous patients.

There is some published data.
That one can find,
for example,
this trial out of China by Doctor Wang.
It’s a randomized trial of standard fractionation versus moderately hypofractionated patients in post mastectomy radiation therapy.
I read every word in the article.
I can find nothing that really discuss is if reconstruction was used and the median follow-up is not that long at 58.5 months,
but there is an.
These were a little bit high.
These were some high risk patients as well.
for everybody T3T4,

but there was no difference in local

regional recurrence between the 50

Gray in the moderate hypofractionation,

but there was an increase

in grade 3 acute toxicity,

so none of this has really LED for

wide adoption of the of hypo frac in

the setting of treating regional nodes

or post mastectomy radiation therapy.

At this point I have done

it in very select patients.

I think that the rest of our.

Group has but it has not yet been
adopted by the NCC N due to the paucity of data at this point.

Although overtime, I'm sure that charm and fabric will provide us with a lot of information.

OK. So, another way, besides shortening the treatment course in the number of visits is by decreasing the volume of tissue that we are treating. One way that’s been around for awhile. Actually, you post all probably know, is accelerated partial breast irradiation therapy, and until recently there was a lack of longer term phase. Should say phase three up there
NOTE Confidence: 0.8805183
00:43:26.884 --> 00:43:29.582 s cure me of longer term phase
NOTE Confidence: 0.8805183
00:43:29.582 --> 00:43:31.917 three data supporting a PBI.
NOTE Confidence: 0.8805183
00:43:31.920 --> 00:43:34.917 We do have these two studies that I put
NOTE Confidence: 0.8805183
00:43:34.917 --> 00:43:37.898 up here that now are have randomized
NOTE Confidence: 0.8805183
00:43:37.898 --> 00:43:41.120 data giving us their ten year outcomes.
NOTE Confidence: 0.8805183
00:43:41.120 --> 00:43:42.143 The NSA BP.
NOTE Confidence: 0.8805183
00:43:42.143 --> 00:43:44.189 39 that looked at whole breast
NOTE Confidence: 0.8805183
00:43:44.189 --> 00:43:46.586 irradiation with standard frack versus
NOTE Confidence: 0.8805183
00:43:46.586 --> 00:43:48.578 accelerated partial breast irradiation
NOTE Confidence: 0.8805183
00:43:48.578 --> 00:43:51.034 therapy using either breakey therapy or
NOTE Confidence: 0.8805183
00:43:51.034 --> 00:43:53.920 external beam twice a day for 10 fractions.
NOTE Confidence: 0.8805183
00:43:53.920 --> 00:43:57.120 So patients would be done in a week.
NOTE Confidence: 0.8805183
00:43:57.120 --> 00:43:58.664 It’s very interesting results,
NOTE Confidence: 0.8805183
00:43:58.664 --> 00:44:00.594 so they were really looking
NOTE Confidence: 0.8805183
00:44:00.594 --> 00:44:01.999 at in ipsilateral.
NOTE Confidence: 0.8805183
Breast tumor recurrence. At 10 years it was found to be 4% and the accelerated partial breast irradiation and 3% in the whole rest of radiation arm. But based on their statistical analysis, even though there's just that 1% difference, it did not meet the criteria for equivalence, so API was not bound to be equivalent to whole breast or radiation therapy. That being said, in the discussion the authors discuss how with that 1% difference in lower risk patients. This still does perhaps leave the door open for a PBI for low risk patients.
The Florence trial. He has gained a lot of attention and that has treated accelerated partial breast irradiation therapy. So when we're trading with accelerated partial breast radiation therapy, you probably all know that we are really concentrating the radiation therapy on the tumor bed and an expansion, and therefore we are leaving more of the well. We're leaving the uninvolved breast or a good portion of the uninvolved rest out of the high dose area.
like this one can.
Also.
Less dose to the healthy tissues as well,
so the Florence trial used accelerated
30 Gray and five fractions using
and I MRT approach versus whole
breast and standard fractionation.
So at 10 years with their randomized trial,
there was no significant difference in
ipsilateral breast tumor recurrence.
It was 2.5% in the whole breast
versus 3.7% in the accelerated
partial breast irradiation therapy.
But based on their statistical analysis,
this was not.
Statistically different, there was also significantly less acute in late term toxicity with the accelerated partial breast radiation therapy, so they partial breast irradiation therapy has made it into the national guidelines. It’s been there for a little while, but on the most recent iteration, the Florence Regiment is listed as the preferred regimen, and it is recommended that the Astro guidelines where I’ve put a reference on here. As many of you may know, Astro has published guidelines regarding
who is suitable for accelerated partial breast irradiation therapy, and there are three groups, suitable cautionary and basically do not treat unsuitable. So here at Yale, we are working. We do treat accelerated partial breast irradiation therapy. Although not very often for suitable cases, just because the hypo frack is so works out so well and you’re really not saving the patient much time. However, we are in the process of gearing up to start offering treatment in the manner that was used in the Florence trial,
the 6th grade Perfection Times 5 fractions and that was every other day. Using I MRT.

So we are working with our physics department and doing all the safety checks and getting our policies and procedures in place to start adopting that. But we are not on line for that just yet.

So what about decreasing our the amount of tissue that’s treated in the setting of regional nodal irradiation? Well, there is some ongoing trials that we read before this is widely adopted to start eliminating our nodal fields. In certain cases we need some
00:47:40.014 --> 00:47:41.860 more guidance on that in,
NOTE Confidence: 0.81489193
00:47:41.860 --> 00:47:43.740 especially in the post mastectomy
NOTE Confidence: 0.81489193
00:47:43.740 --> 00:47:45.622 setting you know who who,
NOTE Confidence: 0.81489193
00:47:45.622 --> 00:47:47.512 when the patients have involved,
NOTE Confidence: 0.81489193
00:47:47.512 --> 00:47:50.284 knows, who can we really skip treating
NOTE Confidence: 0.81489193
00:47:50.284 --> 00:47:52.904 the regional nodes and still ensure
NOTE Confidence: 0.81489193
00:47:52.904 --> 00:47:55.279 that we have excellent outcomes?
NOTE Confidence: 0.81489193
00:47:55.280 --> 00:47:58.136 This trial, the NSA BP 51 it was
NOTE Confidence: 0.81489193
00:47:58.136 --> 00:48:01.455 open at Yale for a while and it
NOTE Confidence: 0.81489193
00:48:01.455 --> 00:48:04.119 was very challenging to accrue to,
NOTE Confidence: 0.81489193
00:48:04.120 --> 00:48:06.948 and it was nationally quite difficult to
NOTE Confidence: 0.81489193
00:48:06.948 --> 00:48:10.555 accrue too so really long trial may not name.
NOTE Confidence: 0.81489193
00:48:10.560 --> 00:48:14.580 Maybe that was part of it that it’s a bait.
NOTE Confidence: 0.81489193
00:48:14.580 --> 00:48:16.986 You can read the name there,
NOTE Confidence: 0.81489193
00:48:16.990 --> 00:48:19.412 but basically what it does is it
NOTE Confidence: 0.81489193
00:48:19.412 --> 00:48:21.523 took patients who had pathologically
NOTE Confidence: 0.81489193
00:48:21.523 --> 00:48:23.020 proven by biopsy,
NOTE Confidence: 0.81489193
00:48:23.020 --> 00:48:25.310 axillary nodal involvement who received.
NOTE Confidence: 0.81489193
00:48:25.310 --> 00:48:26.276 Neoadjuvant chemotherapy.
NOTE Confidence: 0.81489193
00:48:26.276 --> 00:48:28.691 Then they would undergo either
NOTE Confidence: 0.81489193
00:48:28.691 --> 00:48:30.140 lumpectomy or mastectomy.
NOTE Confidence: 0.81489193
00:48:30.140 --> 00:48:32.550 And they could have Sentinel
NOTE Confidence: 0.81489193
00:48:32.550 --> 00:48:33.996 lymph node biopsy,
NOTE Confidence: 0.81489193
00:48:34.000 --> 00:48:36.290 Sentinel lymph node biopsy converted
NOTE Confidence: 0.81489193
00:48:36.290 --> 00:48:39.320 to XI section or XI section.
NOTE Confidence: 0.81489193
00:48:39.320 --> 00:48:42.616 But if they were converted to YPN 0
NOTE Confidence: 0.81489193
00:48:42.616 --> 00:48:45.598 then these patients were eligible.
NOTE Confidence: 0.81489193
00:48:45.600 --> 00:48:46.065 Remember,
NOTE Confidence: 0.81489193
00:48:46.065 --> 00:48:48.855 they had to have T1T3 pathologically
NOTE Confidence: 0.81489193
00:48:48.855 --> 00:48:50.910 proven N1 disease upfront,
NOTE Confidence: 0.81489193
00:48:50.910 --> 00:48:51.942 neoadjuvant, chemo,
and then rendered YPNO in the axilla.

So arm one was omission of regional nodal irradiation therapy, with so lumpectomy patients would only have the breast treated high tangents. Not allowed.

Mastectomy would have no radiation. An arm two, which was I call it the yes regional nodal radiation therapy would treat in though that arm the whole breast and the chest wall would receive radiation plus regional nodal irradiation which was defined on the trial as internal mammary nodes. Une dissected axilla.
And the superclass.

So you’re either getting a very limited radiation or basically the full boat.

And I think that some people when I mean I know when I talk to patients about the trial one, either want one arm or the other, and many people were reluctant to let go of the regional nodal radiation therapy.

So I personally was not able to accrue anyone to the trial when I spoke with them. And I think that that was a problem kind of nationwide, but it’s now closed to accrual.
They’ve obviously reached their goal, which is great.

And I am not aware of any preliminary results at this time.

Another trial this is open at Yale and we are actively accruing.

So please we would love to have your patience on this trial.

The MA 39 also called Taylor RT. This is different. This is not really looking at response to chemotherapy. It is looking at omitting regional nodal radiation therapy for patients who have a more favorable cancer as far as biomarker risk is concerned.
So the inclusion criteria. Changed extremely recently within the last eight weeks.

Initially when we open the trial, only T1 or T2 patients were allowed on the trial, but now patients with T3 disease are allowed. Also, a very recent change and what the definition of low volume nodal disease. What is this? Is the updated version here, so if the patient had lumpectomy or mastectomy an axillary dissection, they can have one to three positive nodes if they have lumpectomy or mastectomy plus Sentinel.
Lymph node biopsy only.

They can now have one to two positive nodes.

That’s a change.

And a huge change is that the archetype score when this trial opened had to be 17 or less to enroll patients.

Now patients with an archetype score of 25 or less are eligible.

They cannot have had neoadjuvant chemotherapy.

They’ve also made it amendment allowing neoadjuvant endocrine therapy.

I should have said Neo there,

don’t worry about it.

Neoadjuvant endocrine therapy is now allowed.
Agemnt endocrine therapy is allowed. Patients are randomized, similar to the other one. The no regional nodal radiation arm that no RNI, so those patients would have to have whole breast irradiation if they had lumpectomy, but no radiation. If mastectomy and then yes, I would be whole breast irradiation or chest wall irradiation depending on their surgery and regional nodal. And like the other trial, regional nodal means internal mammary nodes.
Une dissected axela in the superclass.

And the primary endpoint is breast cancer recurrence free interval,

but of course they’re over looking at.

You know, local recurrence, distant recurrence, side effects, and lymphoedema risk as well.

So the last way to limit or deescalate the radiation therapy is to just not do it.

Those patients were 70 years of age or older T1 tumors.

That’s the kind of most straightforward.

I think that a lot of us now are familiar with the CL GB 9343 trial.

I can, you know,

memorize this one in my sleep.

Those patients were 70 years of age or older T1 tumors.
They could be clinically or pathologically node negative had to be hormone receptor positive and lumpectomy with negative margins. I put the negative margins in red because for this trial negative margins was defined as no tumor on Inc. The patients were randomized to tamoxifen alone or whole breasts or radiation therapy using a moderate hypofractionation course plus tamoxifen. At 10 years you could see the overall survival was the same 67% in Tamar T and 66% in the Tam arm with a lot of those deaths being non breast cancer.
deaths and freedom from local regional recurrence was 98% in the Tamar TR man,
90% in the Tamar that actually was statistically significant,
there was a statistically significant reduction in the risk of local regional occurrence with the radiation being provided.
So you might say, well, this trial should support us doing the radiation,
but because the overall survival was not different and although I don’t have it up there,
the very low rate of distant recurrence was no different.
The breast cancer specific
00:54:03.604 --> 00:54:05.048 mortality was not different,
00:54:05.050 --> 00:54:07.210 so the radiation was not doing
00:54:07.210 --> 00:54:09.040 anything to prevent those more.
00:54:09.040 --> 00:54:11.206 One could argue more meaningful outcomes.
00:54:11.210 --> 00:54:12.164 So this could.
00:54:12.164 --> 00:54:14.390 This is used for two in support
00:54:14.466 --> 00:54:16.646 of omitting radiation therapy for
00:54:16.646 --> 00:54:18.826 women that meet the criteria.
00:54:18.830 --> 00:54:21.377 If I see patients and I have a 71
00:54:21.377 --> 00:54:23.824 year old patient who is very who I
00:54:23.824 --> 00:54:26.046 feel has a life expectancy exceeding
00:54:26.046 --> 00:54:29.307 10 years or then we talk about hey,
00:54:29.307 --> 00:54:31.666 maybe we should do the radiation so.
00:54:31.670 --> 00:54:33.980 But it is good fodder for discussion
00:54:33.980 --> 00:54:36.832 and an it can help to find those
patients for whom a mission of radiation therapy would be certainly acceptable.

Also, patients are not going to take the endocrine therapy. They really should get the radiation.

Prime two is similar. It’s a little bit behind as far as how long it’s been accruing and following out the data.

The women can be 65 or older, T2 tumors up to three CM. They must have pathologically negative nodes with Sentinel node biopsy or XI section hormone receptor positive and their definition of a
negative margin is 1 millimeter.

They live had some limits that the CL GB trial did not.

The tumor could be grade 3 or have elvii, but you could not have.

Both an once again must have adequate their Bay and we see similar results at the five years.

It almost mirrored the CLG be at the five years where ipsilateral breast tumor recurrence was around 1% in the radiation arm and 4% in the no radiation arm with no difference in overall survival.

There was a recent update.
at the San Antonio Breast Conference, however, that paper has not followed showing similar results as CLG be at 10 years with ipsilateral breast tumor recurrence around 10. In the know in the, I miss those up in the no RT arm and then .9% in the RT arm. So I think that Prime 2 once that paper comes out, that paper comes out, you know we may start offering for younger women or women with some larger tumors. Omission of radiation therapy. Now this is my last slide before I get into the thank yous in the summaries, and these are trials that I'm not that familiar with.
To be frank with you, there seemed to be more surgical trials, but I thought they were worth just springing up.

We have the comet trial open at Yale. The Pi is doctor Golshan, and that if I’m understanding correctly, looks at. You know what’s considered a lower risk DCIS grade one and grade two and looking at endocrine therapy alone with surveillance in lieu of surgery, an obviously, if we don’t do surgery. We’re not coming to the radiation.
so in a way this would be part of
omitting radiation and the Lord
trial is somewhat similar as well.
I'm for my homework.
I feel I need to learn a little
bit more about these trials,
so I'll give you guys some homework too,
but I felt that it would not be
complete without bringing it up,
but I think it’s interesting
you know the question that seems
to be being asked if I'm is,
to be asked if I’m is,
can screen detected low risk
dcis be managed by an active
surveillance strategy rather than.
Surgery.
So in summary, we are seeing you know in real time and working further towards a deescalation of radiation therapy for appropriate patients in regard to the number of treatment visits infractions, the volume of tissue treated, and the appropriate emission of radiation therapy, and I’d like to thank you if you have any questions about any of the references or would like to discuss further. That’s my contact info, thanks. Thank
00:57:45.280 --> 00:57:47.446 you so much Doctor Knowlton wow
NOTE Confidence: 0.85066074

00:57:47.446 --> 00:57:49.640 three really fantastic talks and I
NOTE Confidence: 0.85066074

00:57:49.640 --> 00:57:51.355 really appreciate everyone’s time and
NOTE Confidence: 0.85066074

00:57:51.355 --> 00:57:53.645 effort in our audience for listening
NOTE Confidence: 0.85066074

00:57:53.645 --> 00:57:55.640 and putting in some questions.
NOTE Confidence: 0.85066074

00:57:55.640 --> 00:57:57.860 Please feel free to put in.
NOTE Confidence: 0.85066074

00:57:57.860 --> 00:58:00.576 More questions will be happy to answer
NOTE Confidence: 0.85066074

00:58:00.576 --> 00:58:03.934 them and while we wait for those I have
NOTE Confidence: 0.85066074

00:58:03.934 --> 00:58:06.370 a couple just listening to the talks.
NOTE Confidence: 0.85066074

00:58:06.370 --> 00:58:08.590 Maybe I’ll start with Doctor, Doctor
NOTE Confidence: 0.85066074

00:58:08.590 --> 00:58:11.550 Hooley and a little bit about the contrast.
NOTE Confidence: 0.85066074

00:58:11.550 --> 00:58:13.770 Enhance image Ng for screening and
NOTE Confidence: 0.85066074

00:58:13.770 --> 00:58:16.438 how you can do that without contrast.
NOTE Confidence: 0.85066074

00:58:16.440 --> 00:58:19.560 Potentially I was.
NOTE Confidence: 0.85066074

00:58:19.560 --> 00:58:21.076 You know like more,
NOTE Confidence: 0.85066074

00:58:21.076 --> 00:58:23.846 but you know you know where we’re
at in the United States and maybe
where we're going and
be great to hear about that.
Sure, so uh, MRI has shown that
contrast enhanced screening has the
highest cancer detection rate, right?
So because cancers are vascular,
You know Ivy contrast.
There are some studies looking at
MRI and diffusion weighted images,
or some people who say that they will never happen.

Some people say that it will perhaps somehow happen that you could do MRI with diffusion, weighted imaging or some other technique that some really smart people are going to invent and figure out some sequences where we can look at vascularity without Ivy contrast injection. Likewise, there are also some ultrasound products out there. Randy Butler participated in an auto acoustics ultrasound study that was the optoacoustic. Ultrasound equipment was just
FDA approved last January and it’s basically looking at heating lasers and heating lights. Laser light and heating the blood vessels and looking determining oxygenation within the blood vessels. And she published a couple of articles. Common radiology, which is our top journal showing the vascularity within tumors and superimposing that over a traditional ultrasound so that is vascular based without without contrast and there’s some other. New ultrasound techniques.
Also that are a little bit different that measure.

They can measure vascularity as well, so those are the ones that right now are. Active you know, and we could see it. You know, in five or ten years or maybe sooner. Actually opt acoustics is already out there, you have to wear fancy space classes and stuff. Awesome, thank you a question for Doctor Abraham. What are some of the signs or indications that you know clinicians
out there should be aware of, for you know for those that end up getting implants for reconstruction with the implant associated anaplastic large cell lymphoma, which is, you know, gotten some press in the last year or two. Dial yeah, so first of all the presence of a textured implant which is obviously for somebody who’s not a plastic surgeon. Maybe a little bit challenging. So if there’s any concern you know, have the patient go back to the plastic surgeon so you know because we are at this point considering removing them sort of prophylactically and then any change,
particularly a delayed ceroma, what is classically referred to. So you know in breast surgery seromas are not uncommon, but you know, at the time of surgery or immediately following. Postmastectomy radiation, but if there is a saroma that develops and delayed fashion to years after an implant is placed at sign for concern. Thank you and maybe a last question. For doctor Knowlton. You know, I I, you know, often we see patients that are over the age of 70 small your positive
breast cancers and you know with the LGB data that you showed you know undergoing breast conservation and forgoing radiation and you know doing anti estrogen therapy. But have you also seen the converse where some would just prefer to do a short course of radiation as opposed to putting themselves through? You know 5 plus years of anti estrogen therapy. I guess like if we bias a patient one way or the other when they get to you, how is that discussion go that I see this every week?
I would say every week.

So and you know, I listen to the patient. Many of them come in with some biases against the endocrine therapy. So that doctor Google doesn't do endocrine therapy much justice. So I talked to them about data showing that you know at least half of patients really don't get any of these. You know, join aches or hot flashes and that's placebo. Patients got the same amount. Maybe they should just give it a try. I discussed the benefit of helping prevent breast cancer in the contralateral breast.

An IV after I finish my spiel,
it’s attempting to get them to be
more open to AI or.
Tim, sometimes they will try it
and we’ll check back in with each
other in two to three months.
And if they’re still taking it in,
and if they’re not,
then I have come back and done the
radiation at that point or even,
or some if they might give my
initials feel an they still tell
me I’m not by I’m not going to
take it no matter what I say, OK,
and then we would either.
01:03:23.420 --> 01:03:24.221 Do you know?
NOTE Confidence: 0.8341066
01:03:24.221 --> 01:03:25.823 Depending on the characteristics of the
NOTE Confidence: 0.8341066
tumor and the patients comorbidities,
NOTE Confidence: 0.8341066
01:03:27.570 --> 01:03:30.530 we may do a fast regimen of once a week,
NOTE Confidence: 0.8341066
01:03:30.530 --> 01:03:32.898 or you may do the moderately hypo frack.
NOTE Confidence: 0.8341066
01:03:32.900 --> 01:03:33.554 The 15.
NOTE Confidence: 0.8341066
01:03:33.554 --> 01:03:35.189 Plus or minus a boost,
NOTE Confidence: 0.8341066
01:03:35.190 --> 01:03:37.353 so I certainly do see that that
NOTE Confidence: 0.8341066
01:03:37.353 --> 01:03:39.040 quite quite often every week.
NOTE Confidence: 0.8348222
01:03:39.860 --> 01:03:42.335 Ann and maybe just to finish off on on
NOTE Confidence: 0.8348222
01:03:45.093 --> 01:03:47.159 Is there kind of a cut off where you
NOTE Confidence: 0.8348222
01:03:49.671 --> 01:03:52.098 would say that if they went with
NOTE Confidence: 0.8348222
01:03:52.098 --> 01:03:54.095 anti estrogen and decided to stop
NOTE Confidence: 0.8348222
01:03:54.095 --> 01:03:56.271 and wanted to come back to you to

111
radiation where you’d feel comfortable.

Well, that’s a good question. You know two or three months

I wouldn’t even blink an eye, especially if they were taking endocrine therapy for the bulk of that I have done up to six months.

I have done it, but at that point we may ask the patient to have another Mamo before starting the radiation.

And sometimes I’ll bring those patients up in our multidisciplinary tumor board. I did have one patient where it was a year out, but she was substantially high.

Risk enough that I presented,
or at our multidisciplinary tumor board we got. Breast imaging no evidence that not. There's nothing suspicious on that, and I did offer radiation, but beyond six months I would really want to have a multidisciplinary discussion about that. Thank you and again thank you all so much for these three wonderful presentations I learned so much in the course of the last hour and a half and the great thing is that this is recorded so others could go back and be able to look at that. Really thank the audience for
01:04:58.165 --> 01:05:00.360 joining us for this series of three breast CME’s here at Yale and and
01:05:00.360 --> 01:05:02.236 look forward to continuing them in the next academic year.
01:05:02.236 --> 01:05:03.908 So with that thank you so much.
01:05:03.908 --> 01:05:05.588 Have a great weekend. Thank you, thank you.