

Advances in Stem Cell Transplant

Webcast

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Introduction

Andrew Schorr:

Hello and thank you for joining us once again on Patient Power. Every two weeks we do a new program on mdanderson.org connecting you with renowned cancer experts, the latest in cancer medicine. We have a lot to talk about tonight. First, let's kind of orient you. So when you develop cancer, what's happened? So in a sense your immune system has let you down. You know, we're making new cells all the time, so let's think of our body as sort of little copier machines going on making new cells. Well, sometimes in the case of cancer the copy machine can kind of break down. Now it is producing a copy with a big streak down part of it, and it's not useable, and the machine won't shut off, and it's making cancer cells, and it's making more and more.

And normally when you make a bad copy in a healthy person your immune system says, oop, bad copy, zap, gets rid of it, gets the copy machine on track, away you go. But when we develop cancer, as I did with leukemia, my immune system didn't recognize the bad copies, and I started making too many bad copies of lymphocytes in my case. And there are all sorts of leukemias, and lymphomas, other blood-related cancers we'll talk about tonight. Now, those cancers for a number of years it increasingly get perfected, one of the approaches is to in a sense give you a rebooted immune system or even somebody else's immune system, and we'll learn more about how that works in what used to be called bone marrow transplant but increasingly now we call stem cell transplant.

Well, all of this can kind of be lingo and concepts you've never thought about until you get a serious diagnosis. It could be acute lymphocytic or lymphoblastic leukemia, acute myeloid leukemia, a chronic leukemia like mine, CLL, or CNL, or various lymphoma or multiple myeloma, and there are other illnesses too. And you start hearing this lingo. Well, in today's program we're going to decipher all that. We're going to demystify all that.

But first let's talk to somebody who faced this when he was 45 years old. Joining us from Warren, New Jersey is Eddie Melanda. Now you're 48. I have to say there's going to be a happy story we're going to tell, but you go back three years ago, Eddie, and you became a pretty sick guy. You had terrible fatigue, right?

Leukemia Diagnosis

Eddie:

Oh, yes, yes. That's how we first recognized that something was wrong. While exercising it was a fatigue that never felt before, so drained. And then I got tested. They thought it might have been my heart.

Andrew Schorr:

Well, your sister-in-law I know is a gastroenterologist and your wife is a pharmacist, so she's a healthcare professional. And you had been a firefighter for many years, right?

Eddie:

25 years before that, yes.

Andrew Schorr:

Linden, New Jersey. I always think of, you know, I see the calendar the fire departments put out, see these buff guys, you know, maybe not always, but we think of you having to be in good shape to fight fires. So when you had this, you were just bone tired, that had must have been a shocker just feeling that way.

Eddie:

Yeah, never felt that way. It was important my sister-in-law got me in there quickly to get tested, and then it was a couple weeks before the blood work came back and they took it, and that's when they found out what it was.

Andrew Schorr:

So she was looking at your heart, and you told me earlier you did the stress test and you're on the treadmill. You're doing all that. They take the blood. The blood comes back. What did the blood show?

Eddie:

The high white count, and they realized it was cancer and leukemia.

Andrew Schorr:

Now, you were diagnosed with ALL or acute lymphocytic leukemia as an adult. That's the cancer that we normally think of in kids if they have leukemia, and most of the time, happily, now it's cured with chemotherapy combinations, usually. I know a little boy treated that way. He's doing great.

So what about you? So did you start chemotherapy or what happened next?

Eddie:

Yes. The oncologist in Newark, Newark Beth Israel, Dr. Sabnani, she was wonderful. She researched different protocols from around the world literally and chose M.D. Anderson's protocol with hyperC vat, I believe it is, and we began that quickly, almost immediately, and I went into remission after the first round. And in the time it took to research hospitals and find a donor I went through five rounds of chemotherapy before going down to Houston to M.D. Anderson.

Andrew Schorr:

So you were put in remission with combination chemotherapy. But the best approach would be if you could be cured, and that would be to have your immune system restored with donor cells with a stem cell transplant.

Eddie:

Right. I was Philadelphia positive, they call it, chromosome, Philadelphia chromosome. And it kind of made the decision to get a transplant easier because it's so aggressive if it's a positive chromosome they tell you you have to get the transplant. So it took that decision out of our grasp, and they made the decision for us.

Treatment with Transplant

Andrew Schorr:

At the time your kids, a girl and a boy, were seven and nine, now they're nine and 11. So we all have dreams and I know when I was diagnosed with leukemia that you're going to have grandchildren and dance at your kid's wedding all these things, college graduation, all these Kodak moments, if you will. Suddenly you're wondering will you ever see that. So you're told that your best chance is a transplant.

Now, why did you go to M.D. Anderson? You were in New Jersey. I know why I went from Seattle to Houston. Why did you go?

Eddie:

It wasn't the best chance was transplant, the doctor can tell you, I think the only chance is transplant if you have that Philly positive chromosome. It's very aggressive they say.

Andrew Schorr:

So why did you go to M.D. Anderson?

Eddie:

We went to Sloan, we went to Seattle, we travelled, and we went to M.D. Anderson, and we felt they were the leaders, that they were the best at the procedure I needed, which was the transplant.

Andrew Schorr:

Me too. That's why I went from Seattle to M.D. Anderson because they were expert in what I had. So I'm right there with you. So you need kind of a big team when you face having a transplant. We're going to go through the whole ins and outs of it, but we're lucky enough to have your key physician tonight, and that's Dr. Partow Kebriaei. Dr. Kebriaei is an assistant professor at the M.D. Anderson Cancer Center in Houston, and she is in the stem cell transplantation and cellular therapy area.

Dr. Kebriaei, it must make you feel great to have a patient who's doing as well as Eddie is with us knowing that transplant is not easy, but if people can come out the other side of it, as more people do these days, the hope is they can go on to a full life.

Dr. Kebriaei:

Right. And of course when you ask to have a patient talk about transplant you tend to pick those patients that have done well, and Eddie has done remarkably, phenomenally well, and we hope that more and more numbers of patients will become like that. Of course there are people that are listening that have had a transplant and have not had a similar experience, so by no means does it work for everyone. But there are certain factors that we can look at ahead of time that can help predict those who are going to do better. And one of the areas that we're working on is improving the supportive care and the chemotherapy that patients get at the beginning of transplant, but there's also those areas where we're trying to predict ahead of time who may do better, and again the hope is to have more patients that will end up with a course like Eddie's.

What Eddie had going for him was, one, that he was a fireman and was in excellent shape other than the ALL. And then he had actually an unrelated donor where the risk of graft versus host disease would be higher, yet he really didn't have any significant problems with graft versus host disease. So it was just by a combination of factors that everything worked in his favor, and he did very well. And it's just amazingly, amazingly gratifying to hear patients talk about these good experiences.

What is Bone Marrow Transplant? What is Stem Cell Transplant?

Andrew Schorr:

Right. Now, there are people listening obviously who may be newly diagnosed, they or a family member is researching this. So let's back up. So I use this term bone marrow transplant, and that's been around for at least 25, maybe 30 years now. And then the peripheral blood stem cell transplant. So tell me what is the big concept, and what's been the change from what we would think of as bone marrow transplant to stem cell transplant?

Dr. Kebriaei:

When we say that someone needs a bone marrow transplant what we're saying is that we're going to replace that person's blood forming cells with the donor's blood forming cells. So we are actually transferring or transplanting hematopoietic stem cells, early stem cells that then will go on to give rise to white blood cells to help you fight infection, hemoglobin or red blood cells that carry oxygen and platelets to help you to not bleed. Those stem cells originally harvested from the bone marrow, so for the donor that meant going into the operating room, being given general anesthesia and actually harvesting, collecting those blood forming cells directly from the bone marrow, and we called it bone marrow transplantation.

Subsequent to that we developed drugs like Neupogen or filgrastim or G-CSF, those all mean the same thing. They're agents that stimulate those hematopoietic stem cells, those early blood-forming cells to move from the bone marrow into the peripheral blood, and we can now collect the cells from the peripheral blood by just putting a catheter into the donor and collecting those cells. So the term peripheral blood stem cell transplant means getting those blood forming cells from the periphery rather than from the bone marrow.

Now we're doing umbilical cord blood transplantation increasingly more, and there we're getting those early blood-forming cells from the umbilical cord and placenta of infants. So that term really refers to where the blood-forming cells are coming from.

Every time you change your transplant stem cell source the mixture is slightly different, and so risk of graft versus host disease may be different, and we're still investigating what those differences are and if it is significant.

Types of Transplant

Andrew Schorr:

Okay. I'm filled with questions, and I'm sure things that Eddie wondered along the way. So first of all when someone needs a transplant I know there are times--there are two kinds. There's allogeneic and autologous, and I'd like you to define those for us. If it's where you're getting somebody else's cells this whole idea of matching, tell us where we are there because I know the best would be do you have an identical twin, but if you don't, short of that, how do you have somebody who matches up well enough so that you can hope that this can be a cure?

Dr. Kebriaei:

You have basically two types of transplants. You have an autologous stem cell transplant where we give chemotherapy to the recipient, to the patient, collect their own blood-forming cells, either from the bone marrow or from the peripheral blood, and then give it back to the patient. That's autologous, auto or self. And indications for an autologous transplant would be a disease like lymphoma where

the cancer cells are not in the bone marrow, It has to be a condition where the disease is outside of the bone marrow and the bone marrow is clean.

Allogeneic transplantation is where you have a condition that's caused problems in the bone marrow, like acute myeloid leukemia or acute lymphocytic leukemia. There we're taking those blood-forming cells from a donor, from someone else. That can either be a brother or a sister who is appropriate, it's HLA matched, or from a volunteer unrelated donor who is well matched.

And then within allogeneic transplant, we have syngeneic transplantation, where we use a genotypically identical twin.

And the way we determine the matching within allogeneic transplants is by the MHC system, which is called HLA in humans. So if you talk to your transplant physician they'll say the HLA typing of this donor is appropriate for you. There has to be a minimum level of HLA matching for us to be confident that the donor's cells will not be rejected or cause a lot of graft versus host disease in the recipient.

Andrew Schorr:

Right. We're going to talk a lot more about this in detail. We're visiting with Eddie. He had a stem cell transplant at M.D. Anderson for his ALL leukemia. He's doing really well. And also his doctor, Dr. Partow Kebriaei, who is a specialist in stem cell transplantation and the research that's moving on at M.D. Anderson where they do more of these transplants than anywhere else.

We'll be back with much more of our live webcast with M.D. Anderson and Patient Power right after this.

Preparing for Stem Cell Transplant

Andrew Schorr:

Welcome back to Patient Power, our live webcast discussing advances in stem cell transplants. I'm Andrew Schorr, an M.D. Anderson leukemia survivor, broadcasting live from Seattle Washington. We have with us Dr. Partow Kebriaei, who is at M.D. Anderson, who's a transplant specialist. She joins us from Houston. And we have one of her patients, and that's Eddie Melanda, 48 years old, former firefighter and father of two calling in from Warren, New Jersey.

Eddie, just want to touch base with you as we continue our discussion, and then we'll get back to the doctor. So the doctor pointed out transplant is a big deal, and it's worked out well for you. You met a lot of people along the way. Some people did well, maybe others didn't, but for you it wasn't a question. You needed to have it, and I know you had the kind of full-blown transplant where you had a good degree of total body radiation to get you ready for it. You were there in Houston for four months, weren't you?

Eddie:

Yes, we were. We moved the whole family down. We had a baby-sitter who came with us, thank goodness and we moved there for four months, took the kids out of school. We were lucky enough to hire a former teacher, a tutor down there, and the nice people up here would send down the work for the kids, and we made it work. We didn't want to split up the family if we didn't have to.

Andrew Schorr:

Well, it's quite a journey, and we'll talk about that. I did a video years ago on bone marrow transplant, and one of the patients said, you know, there continues to be innovation but have to recognize it's, as he said, no walk in the park. Along the way in this program we'll talk about the so-called term mini transplant where there are patients who receive much less radiation than you did, and it's available now for some illnesses for people who are older who maybe couldn't get transplant before. We'll describe that.

But let's get back a little bit Doctor, to some of the basics, just to get us to that point where we can have the discussion about mini transplants or what they call nonmyeloablative transplants or more about the cord blood transplants.

So you try to find a match. That's where we left off in the story. I understand in Eddie's case there was a match found from a woman in Germany, 29 years old, I think. So how does that happen? Somebody had been typed along the way. They get a call and said, You know what, your cells can help maybe save somebody's life. And hopefully the person says, Yes, I've been typed and I said I would donate and I will, and they do. So then you have to get someone like Eddie ready. How do you prepare them to accept the transplant? What's involved in that?

Dr. Kebriaei:

So he will get chemotherapy before he gets the cells, and the reason for the chemotherapy is, one, it's going to get rid of any residual leukemia that's there at low levels that we don't necessarily pick up by bone marrow testing or peripheral blood tests. And, second, and the more important function of that chemotherapy, that we call a conditioning chemotherapy or you might hear it as a preparative regimen, is to really prepare the immune system so that it will accept the donor's cells.

And that conditioning chemotherapy may either be what we call a myeloablative regimen that's typically very strong, , or what we call a mini- or reduced intensity regimen where the intensity of the chemotherapy is not as strong, meaning you will have less of those side effects such as nausea, vomiting, mouth sores, hair loss, etc., but it's just high enough to really suppress the immune system to accept the

donor's cells. So as we're learning more about the graft versus tumor component of transplantation, which is really where the efficacy of transplant comes in, we're able to modify the conditioning regimen that we use.

Andrew Schorr:

Okay. I play a little game with the M.D. Anderson experts we have on. It's sort of like I'm smarter than a fifth grader. I want to try something out on you. You tell me if I'm right. And that is with the big myeloablative conditioning you're sort of almost destroying or almost somebody's immune system which had been sick, and then as you said create space for the new immune system, the donor cells. With the nonmyeloablative you're sort of nicking it or knocking it back, if I'm right, so that the donor, the healthy cells that come in are stronger and can kind of win the battle. And don't you call that like the graft versus leukemia effect?

Dr. Kebriaei:

Yes, right, exactly. The fully ablative transplant, that conditioning regimen, was based on the idea that the more chemotherapy we give the more successful we are in eradicating the tumor cells, which is true. But again with the mini we're still affecting the immune system, and that's really the more important part of the efficacy of the transplant.

Andrew Schorr:

All right. So hopefully I get a good grade from you, the professor.

Dr. Kebriaei:

You get an A plus.

Andrew Schorr:

Okay. I get an A plus. Good. I'm around for two more weeks. I do another webcast in two weeks. Good.

Now, let me see what happens next then. If you can for some illnesses, and we'd like to understand where this applies, do a less toxic preparation, if you will, then does that mean that some older people who might not be in the shape that Eddie was as a former firefighter and these buff guys with the air packs and can leap tall buildings in a single bound and all that.

Dr. Kebriaei:

Right.

Andrew Schorr:

You know if they're not in that shape, does this open up transplant for them and what illnesses does that apply to?

Mini Transplant

Dr. Kebriaei:

Yes, that's correct. So with a less intense conditioning regimen we can take patients that are older. For instance our mini transplants now are offered to patients up to the age of 80 years. Or there are also patients that are younger but they may have sustained some damage from their initial chemotherapy, and they would be another group where we would try to use a less intense chemotherapy combination.

The trick is that if the disease that we're transplanting is an aggressive disease with a high proliferation rate, the tumor cells are rapidly turning over, such as ALL, in general the less intense regimens are not as effective. They really currently are most effective for more indolent types of cancers like chronic lymphocytic leukemia, like chronic myeloid leukemia, like indolent lymphomas such as follicular lymphoma or small lymphocytic lymphoma,.

For acute myeloid leukemia or acute lymphocytic leukemia what we see is that we really need the intensity of that conditioning regimen, and so the best disease control still comes from the fully ablative transplants. That said, as we refine mini transplants we're working towards being able to offer that for patients even with the more aggressive types of cancers.

Andrew Schorr:

Now, somebody might have as preparation heavy-duty chemotherapy and/or they might have radiation as well, and it used to be pretty heavy doses. Certainly Eddie had that. So give us an order of magnitude of how much you've been able to reduce this from what it had been universally to what it can be in some cases now.

Dr. Kebriaei:

So traditionally a myeloablative transplant conditioning would be total body irradiation along with an alkylating chemotherapy such as cyclophosphamide or etoposide. However, for a lot of diseases, and at M.D. Anderson essentially for all of our diseases now, we've replaced the total body irradiation with another chemotherapy so a combination such as busulfan and fludarabine or busulfan and cyclophosphamide which would still be considered ablative transplants.

With the nonmyeloablatives, we're using different types of chemotherapies. A drug like fludarabine is considered generally a milder form of chemotherapy. Or the total body radiation, where 12 to 14 gray is considered ablative, we've reduced down to 2 gray where we're using that as a component of reduced intensity or nonmyeloablative transplants. It's hard to give you a log cell kill difference between the types of regimens.

Andrew Schorr:

Sure.

Dr. Kebriaei:

But what you as the patient are going to notice with ablative regimens is you're going to have severe mouth sores, more diarrhea, more nausea, vomiting, complete hair loss. With the mini transplants you're going to have some hair thinning, not necessarily complete hair loss, minimal nausea, minimal mouth soreness. What happens to the immune system is with the fully ablative transplant we've completely wiped out the immune system, we give you a new immune system and when we check the immune system 30 days later by chimerism studies, you have become what we call a full chimera, the graft to the immune system is quickly taken.

With the mini, like you said before, we've just nicked the immune system so you stay in a mixed chimera sort of picture where half of your immune system is still yours and half is the donors for some time. So that's the difference.

Andrew Schorr:

There's like a battle going on.

Dr. Kebriaei:

Right.

Andrew Schorr:

But you know that the donor cells, being stronger, are going to win. They're the heavyweight and yours was like the middleweight.

Dr. Kebriaei:

Correct. And in every type of transplant the donor cells have to ultimately win. If they don't that's called rejection of your transplant, and you don't want that.

Andrew Schorr:

No, you definitely don't want that.

We're going to take another break. When we come back we're going to continue our discussion. We're going to learn about this whole other new area of getting stem cells from cord blood, where does that apply. Certainly we know for a while it's been able to apply to kids, but can it apply to adults if a match can't be found some other way. So lots of research that goes on about this at M.D. Anderson, and of course Dr. Kebriaei can help give us a window into that.

Finding a Donor

Andrew Schorr:

Andrew Schorr here on our live webcast discussing advances in stem cell transplant. I'm delighted to do this every two weeks and you know we have a huge library of all the replays, the transcripts, you can find it in the Patient Power section of mdanderson.org. And you know there is both good and bad information on the web, but here is the most authoritative information about cancer all in one place. So I urge you to take a look at that, share it with family members. Most of us have someone in the family or a friend or neighbor affected by cancer. Here is where you can connect to the latest and the best there is to offer in medicine today.

Let's continue our discussion about stem cell transplants as we visit with Dr. Partow Kebriaei and her patient, Eddie Melanda.

Eddie, so you had donor cells from someone else. I mentioned a young woman in Germany. So you've got to be really thankful. Have you found out who that donor was and had any contact with them?

Eddie:

Yes, we've had e-mail contact. Her name is Anga from Germany, and we might meet her this summer. She may come though New York or we may go--we're going to go to Spain this summer so we may hook up with her.

Andrew Schorr:

Well, you and your wife must feel she gave you the gift of life.

Eddie:

Oh, yeah. My wife calls her one of our angels. Dr. Sabnani is the other one, and Dr. Kebriaei is the other one. There are several angels in our life now.

Andrew Schorr:

Well, it's certainly life changing.

Dr. Kebriaei, so he was lucky.

Dr. Kebriaei:

Right.

Umbilical Cord Blood

Andrew Schorr:

In that you go into the database, Caucasian man, donor, things match up. You do all that typing. Things match up. Of course had he had a twin, identical twin, maybe that would be better but things have worked out. But there are people who

you see at M.D. Anderson and they don't have a match. So help us understand this whole area that's gotten some press about cord blood and where that can come into play. What are these cells in cord blood. Can they be pooled, if you will, to create enough to help an adult?

Dr. Kebriaei:

Right. You're going to see numbers everywhere, but I would say 50 to 70 percent of people can find a match on the volunteer donor registry. If you look through the NMDP, the National Marrow Donor Foundation, I think they have over seven million donors. For those we can't find a donor, and often those are patients from minority groups where you just have less representation in that large donor pool that you're searching among, umbilical cord blood transplantation is increasingly being used or offered as an option.

The advantage of umbilical cord blood cell transplantation is that we don't have to do the HLA matching as extensively. So we talk about matching a ten of ten for instance for an unrelated donor, and that's just referring to the numbers of points that we need to match in the HLA system. Well, on a cord blood, we basically can match half of the numbers that we do for the adult stem cell source, since the stem cells don't cause as much graft versus host disease.

The disadvantage is that the actual blood-forming cells in one umbilical cord blood unit is about one tenth from what we get from an adult donor. So one umbilical cord blood unit is not typically enough for an average-sized American adult. So what we do is we use two umbilical cord blood units for each transplant, and that seems to have overcome the limitations of having fewer blood-forming cells that we need.

Andrew Schorr:

Is it as effective?

Dr. Kebriaei:

So with regards to disease control it appears to be as effective. With regards to graft versus host disease it appears to be as effective as a ten of ten matched unrelated donor. We do see more infections, because again all of the cells that we're giving are more immature including those cells that help to form your immune system, so it takes longer for the immune system to recover, to develop. So the period of getting infections is longer. You have an increased risk of viral infections, fungal infections.

And then we also still have a higher risk of graft failure, because remember again there's this battle between the donor and the recipient, and if you don't have adequate numbers of donor cells there's a higher likelihood that the recipient is going to reject these new cells. So we do have higher rates of graft failure with umbilical cord blood transplants. And we're continuing to tweak the conditioning regimen for cord blood to improve on those issues.

Andrew Schorr:

Now, I have a bunch of questions, and I think we've got questions coming in as well as we discuss this. But Sarah from Houston wrote in. She said, "I'm pregnant with my first child. I've heard about blood cord banking. What are the benefits to me, and where can I get more information?"

And I have to tell you, after I was diagnosed with leukemia it was with the confidence of Dr. Keating at M.D. Anderson that we started--he said--we wanted to have a third child. You're going to live a long time, have another child. When that child was being born we thought should we try to bank the cord blood. This was years ago now, 11 years ago.

Dr. Kebriaei:

Right.

Andrew Schorr:

So this whole idea of banking if you're going to have another kid or your sister's kid or whatever, could that be what you need now or in the future or would you really be looking at it coming from a bank or somewhere else?

Dr. Kebriaei:

You know, it ultimately becomes a personal decision, and everyone asks me that. My general recommendation is that if you have high frequency of cancers in your family, and there's certainly those families out there, then it may be reasonable to bank the cord for your child. We do know that even though you really need to match by half the HLA that we do for adults, regardless, the better the HLA match of even umbilical cord blood units with the recipient, then the better the outcome of a transplant. So if you have a child that ends up needing a transplant, if they have their own umbilical cord blood banked, it may lead to a better outcome.

Otherwise, in general, cancer in children is relatively rare and so then I say if you don't have an increased risk of cancers in the family I don't see a strong indication to bank your own cord blood. —However, it's always good if you would donate the umbilical cord product to a cord blood bank so others can use it.

Andrew Schorr:

Right.

Dr. Kebriaei:

And you can ask your obstetrician about donating the cord blood.

Andrew Schorr:

I know in the New York area I've been over to the New York Blood Center and they have a program with a number of hospitals including ones in New York where routinely pregnant women are asked would you donate the cord blood and then it goes into a in a sense, a community blood bank.

Dr. Kebriaei:

Right.

Andrew Schorr:

And that's neat, I think. And that can help people not just with cancers but I know a variety of genetic conditions as well.

Dr. Kebriaei:

Exactly. And we have cord blood bank that we have developed here at M.D. Anderson as well, and we have a system with the hospitals here where you can donate.

Age as a Factor

Andrew Schorr:

Wow, that's great.

Here's a question that came in from Laura, and it actually relates to giving somebody back their own bone marrow cells, if you will, their own stem cells cleaned up. Let me read this. And I know, I'll just say at the outset we can't practice medicine over the internet, so we'll kind of generalize this answer, but it does bring up some issues. Let me read this.

Laura writes, "My mother is scheduled for a stem cell transplant in April. She's supposed to receive her own bone marrow and not that of a donor. She goes for her last chemo treatment, which is the regimen CHOP-R. She has mantle cell lymphoma. She's going for her last treatment tomorrow. She has mantle cell lymphoma, stage IV, with cancer in her bone marrow. She's 70 years old. After her fourth treatment she had a scan that still showed tumors, less in number but still there in the bone marrow. My question is," Laura writes, "if it's still in her bone marrow would she still be a candidate to receive her own stem cells. If not, at her age is she a candidate at all?"

Dr. Kebriaei:

So in general with lymphomas, it is an indication for autologous stem cell transplantation, where you're using the patient's own cells. If there is still some disease in the body by CAT scanning, but you've had some response to chemotherapy, you are an eligible candidate. However, if there's disease in the bone marrow then generally we would not recommend it because what we're doing is just giving that diseased product back to the patient.

There are trials where we talk about purging the bone marrow so we could take a contaminated or a diseased marrow and run it through filters or different methods of trying to take out those contaminating tumor cells, and then give the product back to the patient. That's called purging. And if you're in a trial where they're purging the marrow then it may be reasonable, and that would be an option. But if we're not purging the marrow and there's still disease in the marrow, in general that is the contraindication to doing an autologous transplant .

Andrew Schorr:

Okay. Laura, I know you have a lot of questions about your mother, or anybody listening. So you want to have a knowledgeable discussion with your provider. Ask these tough questions. Sometimes if you're not getting the response to certain drugs does that mean you can't have the transplant? Or, Doctor, just quickly sometimes can there be another regimen that may do the job in preparation for the transplant and then you can go ahead?

Dr. Kebriaei:

Absolutely. So usually if we don't see a response after two cycles, two to three cycles, then we will change the regimen. And again to be clear, you don't have to have a complete response to the chemotherapy up front before an autologous stem cell transplant, but you do have to have a complete response in the bone marrow because that's where we're taking the cells and those cells have to be clean of disease.

Andrew Schorr:

Okay.

We're going to take another break, and when we come back we'll have more of your questions. And I know Juan is listening and wants to know does it apply to people with certain solid tumors, and we'll ask the doctor about that too. More coming up as we continue M.D. Anderson's Patient Power right after this.

Andrew Schorr:

Continuing our discussion of advances with stem cell transplants. I'm Andrew Schorr. So you get diagnosed with cancer. You're terrified. Then you're told maybe you need a transplant. That's even more terrifying. You don't go to school

for the stuff unless you're a doctor. You say, Oh, my god, what is this. Well, somebody won a Nobel Prize for helping develop this, Dr. Thomas and it really has been life-saving for so many people. And at M.D. Anderson and a number of other centers they continue to perfect this to help a wide range people with a wide of range of illnesses, and as Dr. Kebriaei said at the beginning it doesn't work out for everybody. It doesn't work out terrific for everybody, but for some it does, and for many it works well and gives them a second chance at life, as it has for Eddie Melanda, who is with us from New Jersey.

So, Eddie, you had the kind of full boat. You had the total body irradiation. Cycles of chemo. You were in the hospital for a while, and then you were in an apartment as an outpatient in Houston, right? But altogether you were there four months, and then afterwards you were hospitalized one time again, weren't you?

Eddie:

Just for pneumonia probably in the summer of '06, about nine months after the transplant. But I don't think it was related to transplant except that maybe my immune system was still a little low.

How Long will the Procedure and Recovery Take?

Andrew Schorr:

Right. So you went through the range of it but kind of in the prime of life. Some people may be older, and we've talked about that.

Let's take this question for the doctor that we got from Ellen via e-mail. She writes, Dr. Kebriaei how long is the average inpatient hospitalization and then outpatient treatment period for someone who has a mini transplant?"

Dr. Kebriaei:

Different centers do different things, and a lot of centers are now doing the mini transplant as an outpatient actually. So you would still be seen every day or every other day for one to three months, that kind of critical early part of the early transplant. But a lot of centers are now doing it as an outpatient.

At M.D. Anderson our approach is still to do all of our transplants inpatient. The patient is in the hospital for the first month of the transplant, so generally you get the chemo, the conditioning chemotherapy for about a week. You get your stem cell transplant, or stem cell infusion, and then we wait for the white blood cells to recover, and that usually takes about two to three weeks. So you're in the hospital for about a month, and then you're followed in our outpatient clinic for about three months. And there we're seeing you every couple of days, giving blood products, checking for infection, checking for signs of graft versus host disease.

Our approach is to very, very closely monitor during the first several months after transplant, and of course that's done with an entire team of excellent, dedicated professionals. So something I can't stress enough is wherever you go, the center really has to be designed to take care of transplant patients, and it takes many people. It's a multidisciplinary approach. It takes many people to take care of you. So in the outpatient clinic you're seen by our PharmDs and our advance practice nurses every day, every other day, looking for those complications that can happen post transplant such as graft versus host disease, bad infections, signs of graft rejection,. But every center can be a little different.

Andrew Schorr:

Right. But I have to point out one other thing where I think M.D. Anderson really has the whole picture and that is earlier we did a program with one of the advanced practice nurses who helps in counseling for the spouses and partners as well as for the patients. And Eddie, I mean, you know, you're used to dealing with tense situations as a fire man, but here you were in a sense death's door. You really were looking at a treatment you just had to have, and moving your family 1500 or 2000 miles or however far it was is a big deal. The whole thing is stressful. Certainly, the support that they have at M.D. Anderson must have made a different for you and your family.

Eddie:

It really was incredible. Before we even went there, the communication, they returned phone calls quickly. They returned their e-mail quickly. And Dr. Kebriaei communicated with my oncologist, Dr. Sabnani here, a lot. I was surprised how well they communicated before we even went down there. And even during and afterwards it was amazing how experienced they are. And even simple things like their scheduling is so precise. It's an amazing place. They have thousands of people there and their scheduling is right on. And what Dr. Kebriaei said about experience is so important because if something is going wrong these experienced people down there will see it, they'll find it and they'll cut it off, they'll cult it off at the pass. It's very important.

Transplant for Solid Tumors

Andrew Schorr:

Yeah, I found that to be true too.

Now, I mentioned that there are people listening, Dr. Kebriaei, who may have solid tumors. I know years ago there was a lot of thought about doing, and it was happening, transplant for women with breast cancer, and then there were studies that said, you know, maybe this isn't the way to go. Where do we stand with solid tumors? Does transplant have a place today?

Dr. Kebriaei:

Well, so breast cancer is one that you mentioned where we've had a lot of experience. We've done both autologous stem cell transplant and allogeneic transplants, and I think the allogeneic data really hasn't borne out. So when we talk about doing an allogeneic transplant you really are weighing the potential benefit of transferring or giving someone a new immune system versus the risk of all the toxicities, the graft versus host disease etc., and so in breast cancer the risk/benefit was not good. So we're really not recommending allogeneic transplantation anymore for patients with breast cancer.

Autologous stem cell transplant, which really just allows you to give high, high doses of chemotherapy and then we rescue the person with their own stem cells, we're still offering it to breast cancer patients in which chemotherapy options haven't worked. So we're still exploring autologous stem cell transplantation for breast cancer.

Kidney cancer is another one. And in kidney cancer the idea was that the kidney cancer is a cancer that is affected by the immune system, so allogeneic transplantation was looked at. And it seems that a very select group of patients who have minimum disease coming into transplant and who have a particular subtype of kidney cancer seem to benefit from allogeneic transplantation. But again if you look at the disease as an entire group overall the risk/benefit doesn't really support doing transplants for kidney cancer.

It's been looked at in just handfuls of patients with colon cancer. Autologous transplantation was looked at for ovarian cancer. I would say in ovarian cancer again autologous transplantation may be an option, equivalent for advanced ovarian patients. And then of course in testicular cancer high-dose chemotherapy and autologous stem cell transplantation is still an indication.

So in solid tumors where giving high, high doses of chemotherapy, which autologous stem cell transplantation allows you to do, is necessary to control the disease then autologous transplantation can be used. But there really are no solid tumors where allogeneic, using the immune system to try to treat the disease, has been that effective except for kidney cancer in a very select group.

Who is a Candidate for the Procedure?

Andrew Schorr:

Thank you. We just have a couple minutes left.

We got a question in from Jeff in Deer Park Texas, and he says, "I have acute lymphoblastic leukemia. Who qualifies for stem cell transplant?"

So I guess this speaks to the idea, somebody says I have ALL, I have CLL, I have CML, and we think of it as one big disease and we're all the same.

Dr. Kebriaei:

Right.

Andrew Schorr:

How do we consult with you so that you look at our personal situation and then make a recommendation on what's best for us?

Dr. Kebriaei:

So for ALL there are very defined risk factors that we look at. The Philadelphia chromosome that Eddie referred to, a patient's age, a patient's presenting white count, there are different characteristics, and based on that we make a recommendation of whether you need to go to transplant immediately, as was the case with Eddie, or whether we can wait and give chemotherapy a shot and see if chemotherapy will do the trick. And that's the case for ALL, AML, and other types of cancer.

Eddie:

You need to be in remission also, right?

Dr. Kebriaei:

You don't need to be in remission in all cases. In any case if you're in remission coming into transplant your outcome is better, but you don't necessarily need to be in complete remission.

Hope for the Future

Andrew Schorr:

Here's just a Patient Power minute, I'm going to say for a second here. So there you are. You're diagnosed with something pretty serious. A leukemia you never heard of, multiple myeloma, maybe one of these subtypes of even a solid tumor. I would consult with a place where they really specialize in this, and M.D. Anderson is one of the leaders. So there's all sorts of information on the M.D. Anderson website, how to do that. And then as you heard in Eddie's case, and it was the same for me in Seattle, where my community oncologist was then in direct touch with these leaders and subspecialists like Dr. Kebriaei, and then there can be that discussion.

Eddie, I want to get just a final comment from you. So you've been all through this and it's worked out well. What's your hope for the future? And what would you say to a listener who hopes to have things turn out like they have for you?

Eddie:

Well, the second part first is get the best care you can that you can afford, your insurance can afford, because you only want to do this once. You don't want to have a failure and go through it over. Some people do.

Hopes for the future, just to be healthy a happy if it can help other people.

Andrew Schorr:

Well, I have some hopes for you. You're so neat, and I know that's going to be quite a reunion in-person if you get to meet the lady from Germany who donated the cells for you.

And that's something we need to say of course. Whether it's organ donation, being typed, having your bone marrow typed, I'd recommend it to everyone because you can see what a difference it can make, and it made a difference for Eddie.

Eddie, all the best to you and your family, Teresa, the kids.

Eddie:

Thank you, Andrew.

Andrew Schorr:

All the best. Thank you for joining us.

And, Dr. Kebriaei, you have seen a moving target as you've come along in your medical career with transplant. Now it's open to more people in less toxic ways. Are you optimistic that you can continue to refine it and move the field forward?

Dr. Kebriaei:

Very optimistic. I mean certainly we still have a lot of room for improvement, but I think as we're gaining a better understanding of the immunology of these stem cells and what they can do I'm very optimistic that we'll be able to continue to improve the treatments and hopefully have more outcomes like Eddie's.

Andrew Schorr:

Well, we wish you all the best. I know you're a busy lady. You've got two little kids yourself. We're going to let you go home, but I want to thank you. And, Eddie, I know you have, as you mentioned, earlier a real message of thanks to Dr. Kebriaei and the whole team at M.D. Anderson.

Eddie:

Absolutely.

Andrew Schorr:

Absolutely is right. And me too, for all the people who have helped me. I want to thank you for joining us.

A replay of our program will be posted tomorrow probably on the M.D. Anderson site. We have all these other programs including supporting people when you may be at M.D. Anderson for an extended time, not just the patient but the whole family.

And in two weeks we'll have another webcast and that's going to deal with what affects many people with cancer, and that is cancer pain. And we're going to have with us an expert on that, as always. That's Dr. Allen Burton, who will be our guest then, and you can e-mail in questions. Thank you so much for joining us. And, as always, remember knowledge can be the best medicine of all. In Seattle I'm Andrew Schorr. Have a good night.

Please remember the opinions expressed on Patient Power are not necessarily the views of M. D. Anderson Cancer Center, its medical staff or Patient Power. Our discussions are not a substitute for seeking medical advice or care from your own doctor. That's how you'll get care that's most appropriate for you.