

Speakers:

Denise McAllister, MS, ARNP, AOCNP

Audrey

Denise McAllister: Because of introducing the *Building Blocks of Hope* tool first or prior to the physician's discussion, I just want to go back and recap and just tie up some... or connect some dots a little bit so to speak and certainly I think as what we certainly know that myelodysplasia can certainly be a disease of older adults for reasons that have certainly already been discussed. We also have heard that transplant is really the best opportunity for cure. Something though that I was certainly reminded of and that is when it comes to the current therapies today and was highlighted that when we look at Azacitidine or Vidaza. That is an agent that has the only survival data in myelodysplasia of the three FDA approved drugs today. In the high risk disease setting, it has a near doubling in survival at two years. So, that is certainly something to celebrate in this disease by folks being exposed to that drug. When we look at reasons to treat and transfusion dependence is certainly one of them or if people have symptomatic cytopenias meaning if people's platelet count is so low that it's going to put them at risk for bleeding or if someone's infection fighting ability is so limited that it's putting them at risk for life threatening infections. None of that will have an opportunity to get turned around unless treatment is given. We certainly have made a lot of strides when it comes to myelodysplasia especially in the past decade, but those strides have definitely been slow to come, but I think also what we realize today is that through the research that's going on even here locally in your own back yard, research going on at other institutions across the United States as well as even internationally, you see how people are working hard to improve upon the therapies that we currently have today and really try to find cures for myelodysplasia and I was also reminded about Lenalidomide and I worked with this drug when it was being looked at in clinical trials and it specifically has its most robust activity in folks who have a chromosome abnormality or deletion of chromosome 5Q meaning the long arm of chromosome 5 is missing and so we'll use that as an example here. When people have myelodysplasia and specifically deletion 5Q, they are red blood cell dependent. I mean, that seems to be the hallmark of deletion 5Q. It's felt that the gene that is responsible for erythropoiesis or stimulation of red blood cells rests on that chromosome. So, it's felt that Revlimid or Lenalidomide suppresses that clone which you heard about earlier suppressing the clone and as peoples' blood counts drop on therapy and we'll use specifically Lenalidomide, it's felt that when that suppression takes place, when peoples' blood counts drop usually within about the first 21 days of treatment, it's felt that that clone is being suppressed and actually if you were to pick up that *New England Journal of Medicine* article and read about that drug, you will see that people, 67 percent of folks not only achieve transfusion independence, but also folks achieved normalization of their chromosomes. So as that clone was suppressed, peoples' chromosome abnormality went away and had normal chromosomes again.

Q1: Can you repeat that again as it related to your talking about this vital (inaudible 4:35)

Denise McAllister: Yes. Specifically that one, but it also has activity in people who do not have deletion 5Q. It's just not as robust. About 26 percent of folks became transfusion independent compared to 67 percent who did have that deletion 5Q, but if you look at its FDA approval, it is specifically indicated for folks who have deletion 5Q as a chromosome abnormality either by itself or with other chromosome abnormalities. With low risk or Intermediate 1 risk disease transfusion dependent myelodysplasia.

Q2: So, where was that article?

Denise McAllister: It was actually published in the *New England Journal of Medicine*, but it's... that's the article that gained Lenalidomide its FDA approval, but there's also great articles looking at the utility of Vidaza or Azacitidine or Dacogen or Decitabine, but the piece that I really want to hit home is that we do have three FDA approved therapies. Each have their place in the care of patients with myelodysplasia and keep in mind improvements can be slow and people's blood counts can get worse before they get better while on therapy. So, it's important to not get discouraged and be patient and recognize that people as you see your blood counts really plummet on treatment perhaps more so than just from the disease itself. It's important that your healthcare team work you through that.

Q3: I get very discouraged sometimes based on my white count just go down. My blood, red blood had come down, but... and it's climbed back up to eight (inaudible 6:30), but it is discouraging when, you know, I've been on Procrit for six months and I really got discouraged sometimes what that.

Denise McAllister: I think what I also understood you to say is that you're going for a repeat bone marrow. Is that correct?

Q3: I am.

Denise McAllister: That's good to see what is the status of the myelodysplasia today and are you someone who can benefit from active therapy. Currently, you're getting supportive care. You're getting supportive care through the use of Erythropoietin, you're getting supportive care through the use of antibiotics, but certainly that doesn't change what's happening in your bone marrow. So, the question is when will be a good time to start treatment to try to turn some of that around.

Q3: Sometimes I feel like are they really doing enough or are they just letting me go down the tubes? You know, do they care?

Denise McAllister: Well, maybe the rest of us can help her with this. Tell what your experience has been. When I look at you sitting here today, you look really great. I would never look at you and know that you had myelodysplasia sitting among everyone. I wouldn't know if you were a

family member, a friend or if you are someone here today with MDS. So when I look at you, you look well.

Q3: Thank you.

Denise McAllister: What's important is that... and I think the tool that you have in front of you, *The Building Blocks of Hope*, can help, help you become more knowledgeable of when treatment is needed, help you become more knowledgeable of the professional resources that are out there to help and also help you gain more knowledge for yourself of when you need to ask the question so when is treatment is appropriate and the fact that you, obviously, have a local physician who helps with the day to day management which is great, but you also have the partnership of another facility to help oversee your care as well.

Q3: But they don't agree on the same treatments. So, that's discouraging, too. My doctor in St. Joe says something and the one at KU says something else.

Denise McAllister: Does anyone else have any experience with that?

Q4: We have some separate (inaudible 9:05) get along very well. They agree with what...

Q3: Are they both specialists (inaudible 9:14).

Denise McAllister: Yeah. So, I think at that point to listen to both physicians, but at the same time recognizing where you are.

Q3: I can't get them...

Denise McAllister: And what your desires are.

Q3: Arguing with what's going to happen.

Denise McAllister: That's very good. Very good.

Q6: (inaudible 9:38) deciding which treatments the best (inaudible 9:46) go with that?

Denise McAllister: This is actually a good discussion. May I give you this?

Q6: Well, I'm describing that you're having another bone marrow (inaudible 9:58)

Q3: Six months ago.

Q6: Six months ago and you're given...

Q3: They want to compare the one from St. Joe to the one in KU.

Q6: She was seeing the one in St. Joe and she wanted a second opinion. So, that's why she went to KU.

Denise McAllister: And given how your blood counts are low and now as you said you're starting to run low grade fevers, I think to get a fresh marrow to see what the status of your disease is today, has it changed over the past six months and make good decisions going forward is not a bad idea.

Q3: Thank you.

Q7: I was just saying I think you should choose... look at the different doctors and decide which one has the most experience and then...

Q3: They both went to school at KU and they're about the same experience.

Q7: Maybe you should come here or make a choice of where...

Q3: We don't travel that much. We're not travelers. So...

Q8: (inaudible 11:09) will they be inconvenient if it's not... I mean, that you're not putting yourself out on a... I'd consider that, too.

Denise McAllister: That's a very good point.

Q9: Are there areas of the country where it's more prevalent? I mean, we're from Arizona from Flagstaff and (attendee) is the only person there with this illness.

Denise McAllister: Yeah. So, the question is is myelodysplasia seem to be more prevalent and you really do ask a good question and I don't know that I have the best answer for you. So, let me tell you what I know and that is 1) when I first started seeing patients with myelodysplasia, it was not considered a cancer. So statistics were not kept. At one point in early on it was documented that there were only like 1,500 cases of myelodysplasia and today it's estimated that it's about... can be... according to NCCN about 48 per 100,00 people that are diagnosed with MDS. Someone, another physician out of Hackensack, New Jersey had actually accessed the Medicare database and found that folks that carried a diagnosis of MDS that it was much higher than that. So really for the first time true SEER data are the folks that house cancer statistics, collected MDS numbers for the first time and, of course, it's regional. So, 1) it's expected that the numbers of folks who develop myelodysplasia is really much higher than the true numbers that we have captured today. When you look at the literature, it's felt that people who have

hemalignancies can be more common among rural areas and people like who have been exposed to pesticides, folks that perhaps didn't have good precautions over the agents that they were using. Fertilizers, pesticides, those sorts of things, but really as far as regional, I do not have any good numbers. I live in Florida which is a high retirement community. So if you ask me if there's a lot of myelodysplasia in Florida, I'd have to tell you yes. I think there is, but is that higher than, perhaps, you know, what's in Arizona or higher than what's here in Illinois. I don't have the answer to that. Audrey, based on your experience, do you have any knowledge?

Audrey: In certain areas. No. I can say that I usually talk to the people that call in from different areas. It's a good cross section of the United States (inaudible 14:14) one area versus another. I know that we do have some states where we don't have any MDS Centers of Excellence centers. For instance, we don't have one in Kansas, but we have identified the top researchers, the centers that have qualified... We don't give those designations easily, but in order to get (inaudible 14:45) if it may not be convenient for you to go all the time to an MDS center, travel is too far, a lot of times even if you go one time once a year, your local community based physician can work with say someone Dr. DiPersio's level. Let him determine the recipe, if you will, to have a good quality of life and let your local doctor carry out the treatments. That's about how it is now.

Denise McAllister: And it's really good.

Q3: It's not that we... we are just not travelers in lots of traffic like going down towards Kansas City. We have never traveled a lot, so we're getting kind of old to... like young people can take off anywhere with the... and I hate to say that we're getting old. As far as driving...

Q10: It seems like it's an old person's disease.

Denise McAllister: And we've heard that. Yeah. We definitely have heard that. I, too, wanted to tell you that I've had the luxury of working in an academic center for really the bulk of my career and I now am working in the largest private community oncology office in Florida and in a community practice, physicians will see all disease states. So, they definitely have expertise in everything, but when you look at the Centers of Excellence, for example, those physicians there, that's all that they see. That's what they devoted their careers to, that's what they study in the laboratory. That's what they study through and developing research trials for folks, clinical trials. So, the two can work very well together and that's exactly what I heard from these folks that you have the physician close to home who can deliver the care. You have the expertise of an academic center to tell you what they feel is in their best... to tell you what they feel is in your best interest based on the hundreds or thousands of patients who they see with the disease, but definitely what is important is that everyone's on the same page. So, you can have the best of both worlds. The convenience of getting care in your own backyard with your local oncologist and travel every once in a while to the academic center, to the Center of Excellence, to get their opinion.

Q11: But (inaudible 17:39) we had a second meeting at University of Kansas. We just have our blood test sent to the University to that doctor and we go locally to see our doctor and so they can coordinate or he can find something out before the other one does, whatever, but we've been fine just staying locally in small town

Q3: Well, Heartland Hospital in St. Joseph, they coordinate with Mayo's, but I'm not... they don't tell me anything, don't tell me what Mayo's is saying. It's like I don't even know if...

Q12: It's probably (inaudible 18:30)

Denise McAllister: Or while you're at that center getting your bone marrow biopsy and speaking with them ask them how you're going to get the information from them. Ask them if they're going to call you that you would like to hear directly from them and if perhaps that will give you more information to have the discussion with your local oncologist.

Q3: Well, the first time I went to KU, they sent everything to my doctor and then I got it from him.

Denise McAllister: Well, it certainly is appropriate for him to send... for them to send the information directly. That piece is critical to your care, but also I think if you still have a lingering question about what is the outcome of that visit to request a phone call from them is not unreasonable either. So, you can speak with them directly.

Q13: If you do get a copy of your blood (inaudible 19:32).

Q3: All the time, yes.

Q14: But isn't it your right today to ask for... I mean, you can sign and ask for copies of your records so that you can actually see what they're saying. You don't have... That's today's patient has the right.

Q3: I always get copies of everything.

Q14: But you can get copies of their records, too.

Denise McAllister: Sometimes though I hear the scenario that she's saying that if she's there seeing the physician, she has the bone marrow biopsy done and then if she doesn't return to that center then the final conclusion sometimes can be just left with verbal communication between the two physicians. So, I think for you to call and ask what are their final recommendations would be okay.

Q3: That's what KU just told me call us anytime.

Denise McAllister: So when it comes to managing labs, low white blood cell count, low red blood cell count, low platelets and living every day, what tips or what pearls do you have to help others in the room such as managing fatigue or even as caregivers what tips can you share with others to be successful?

Q15: I think as a caregiver, I think that what's I find that (attendee) will come to me and say, "I'm just really exhausted," and I remember her doing this a couple months ago and there was lots of things going on in our lives at that time and I said to her, "You need to think about what you really have been doing." So possibly you don't necessarily have to write down what you've been doing, but make a mental log of what's going on to see exactly what's been going on in your life. Why are you tired and have you been sleeping? Well, have you not? Have you been doing more things than usual? Are you more active? What stresses do you have that are going on in your life that causes that and I think that my remark to (attendee) was, "Think about what you have been doing. You have been busier than you have ordinarily been," and it was like, "Oh, yeah. Okay. Fine. Then I'm okay." It kind of went, "Okay. I'll play that back." So as the caregiver, I believe that you have to give that support to the person who has the illness and that certainly would help out. I'm very blessed and am a two time cancer survivor and have had people who supported me and say everything's going to be okay and here's what's going on in your life. So whenever you can give back and help the other person do that, it's really very, very good. So, have been there and would like to give back. So, keep that mental journal.

Denise McAllister: Any other comments? What other questions do you have?

D16: One thing when I found out that I had MDS, I immediately said, "I'm not going to have stress in my life anymore," because I was under a lot of stress for a long time and I just told myself I can't handle stress. I can't have that because that's not good for me and that's... I think that's one thing is to cut the stress in order to feel better.

D17: I was thinking about... I really hadn't thought about things you could do or should be doing, but we have like, I think, 12 grandkids, something like that. I say that because some are adopted and I don't know if it's final yet, but I think I'm just going to put my foot down about not being around sick people, sick kids because he's got a cough. It's hard to get rid of an infection and, obviously, and so I think I'll be more cautious about that. Make him take a nap. Do you have anything to say? He'd really rather just be left alone.

Denise McAllister: Adequate rest is definitely important especially when someone's hemoglobin is not the best. Some days are better than others. I've had people tell me, for example, that to do the laundry is a chore sometimes, to get up and put clothes into the washer. They literally have to go and lay down, get up and then take the clothes from the washer to the dryer and then lay down again. So, certainly some days are better than others and it is important to pace activities. How

about younger folks over here. Tell me what you do to be successful in your day and living with myelodysplasia.

D18: Well, he has CMML which is early stage and he is a very active person. So, having him cut back a little bit is key to managing his infections. So, he always wears a pedometer and we kind of watch that to see how many steps do you have today because if you have over X number then your ankles are going to start swelling and need to take a rest at that point. So, we try to monitor it. We're still learning that process because he has no other symptoms really. He's not being treated. He's just wait and see stage.

D19: What causes the ankle swelling?

D18: Good question.

D19: I have that.

D18: Sometimes he has open wounds that won't heal and he will go on antibiotics for a couple weeks and it usually takes two weeks to heal whether he's on antibiotics or not. He ices it, elevates it, tries to...

D20: (inaudible 26:17)

D18: I don't know what you were on. I'm not sure. We have one on hand for anytime he gets little scrape or cut on his ankles then he's supposed to start taking it. He tries not to. He thinks he can heal himself, but I keep telling him that his body really can't fight it.

D20: (inaudible 26:37)

D18: I know. So, that's been a little bit of a struggle to try and protect his ankles from getting infected and so we've been doing that successfully for a couple weeks now, but when he does...

D20: Infection of it (inaudible 26:53).

D18: Yes. So, that's the biggest thing. He had a couple of incidents of night sweats. I don't know if anybody else has experienced that.

D21: They asked me that, but I never had night sweats yet.

D18: Like I said, just wait and see and hope for the best. Hoping he can live with it for a long time.

Denise McAllister: Night sweats can fall into those constitutional symptoms that was mentioned earlier. Some people develop it and some don't. Do you have to change your bed linen or your clothing?

D18: No.

Denise McAllister: That's good. How many folks are on active treatment for myelodysplasia? Tell me about your experience today and how your life is with treatment versus how it was before you started treatment if you wouldn't mind sharing that.

D22: Well personally, I didn't even know I had it. There was nothing... The only thing I was very fatigued, very fatigued and I still am. It doesn't make any difference what I do. I retired. It doesn't make any difference. I'm still tired.

D23: Even if you're doing something fun?

D22: Even if I'm doing something fun.

D24: What made me feel grate if we're doing something that's fun or it's something he wants to do... and our oncologist says to do anything you want.

D22: I've been very lucky. I've got the 5Q deletion and I'm feeling good other than just very tired all the time.

Denise McAllister: And were you blood product dependent before? Did you receive red blood cells?

D25: Just two transfusions.

Denise McAllister: Two. Okay. Yeah. And you haven't seen transfusion since. That's really good. Congratulations.

D22: Like I said, I'm very lucky. It does not... I'm sorry?

D26: Your white count, like neutrophils.

D22: My neutrophils are about 11.

D25: Yeah, 11 – 12. They were .6 when she...

D22: No, four. They were .4 when I was diagnosed.

D26: I've seen them .4.

Denise McAllister: So, this is a good example of how one of the FDA approved drugs today can make a difference.

D22: Absolutely.

Denise McAllister: Thank you. How about you, sir?

D27: How about me.

Denise McAllister: How his therapy made it accurate...

D27: Well, I was diagnosed in 2011, November, and I didn't know I had anything wrong with me and I've had my... I just finished my 24th session. I get Decitabine five days in a row for five days then I'm off for three weeks. So, I just finished my 24. So, I've been on it for quite awhile and...

D28: (inaudible 30:02)

D27: Decitabine.

D28: Dacogen.

D27: And I feel great.

D28: Do you have side effects?

D27: Oh, yeah. You have side effects.

Denise McAllister: The question is about side effects.

D27: The first probably six months I was... I got sick. I was ill, tired all the time, but the new drugs today they give me a shot... I get it intravenously now, but a shot for sickness. That takes care of that problem. Another six months I was tired after my treatment. Now, I just go out and I live with it, I go do it and I find something fun to do. So, I go do that.

D28: How long will you do this treatment when you get it for five days.

D27: Till it stops working.

D28: Till it stops working.

D27: Right and then it's either a transplant or whatever we do with it.

D28: I didn't realize it was continuous. I don't know why I would think that.

D27: I've asked, too. How long is it supposed to go on and both oncologists, I have two, and till it stops working then we'll think of something else.

Denise McAllister: Folks can stay on treatment as long as they're gaining benefit and as long as there're not intolerable side effects. So, the thinking is that if you're able to control the abnormality that exists like that clone with therapy and then once therapy stops then we give that clone an opportunity to come back.

D29: What did you have side effects... Do you have side effects now?

D27: No.

D29: While you were taking the therapy. You don't.

D27: (Disagreement sound)

D29: It made you sick or all that...

Denise McAllister: People can develop a new normal as we saw on the graph earlier. Sometimes a white blood cell count may not be totally normal. Sometimes the hemoglobin may not fall within that normal range. Sometimes the platelet count may not fall within that normal range, but it's people still function well without the risk of infection, without the risk of bleeding and without the need for platelet transfusions or without the need of red blood cell transfusions. So, then there are those folks whose blood counts can fall within that normal range with therapy. With Lenalidomide, something that we briefly talked about earlier was iron overload. Each unit of blood contains about 200 milligrams of elemental iron that's not excreted. So, it really only takes about 20 to 25 units of blood before people do become iron overloaded and then iron can land in peoples' organs and you can't get rid of it unless people get take iron chelaters. My experience with Revlimid is an example. In that study just to tell you how significant this is people lived with myelodysplasia on the average about two and a half years before they were enrolled in the clinical trial. The average hemoglobin is like 7.8 grams per deciliter and with each unit of blood, we hope to raise the hemoglobin one gram with each unit. With therapy, with MDS active therapy, the goal is to raise peoples' blood counts where they no longer fall into that range where they need transfusions or they're not at risk for infection anymore. I have had patients receive Lenalidomide where their hemoglobin became normal. In the study people received an average of about five units of blood in an eight week period. This particular agent with deletion 5Q as abnormality had the ability to raise peoples' hemoglobin up to 13.4 and I've

had patients in my own practice where we've had the ability to take them off of iron chelation drugs and do phlebotomies every month to pull off their iron overload. So if you think about people being that heavily transfusion burdened and then suddenly they have the ability to donate blood to get rid of the excess iron and have their hemoglobin still remain normal. So, that's a huge, huge stride in MDS care. It's huge and you think about you receiving 24 cycles of Decitabine and doing very well with no side effects today. I mean, that's really something to celebrate.

D30: Could you talk about Thalidomide or whatever. I don't want to talk... Could you explain what that is? I never heard of that.

Denise McAllister: It's one of the three FDA approved drugs to treat myelodysplasia and you actually find information about it in *The Building Blocks of Hope*, but there's three FDA approved drugs and as mentioned earlier someone is taking Lenalidomide, which is an analog of Thalidomide. Thalidomide was...

D30: Was that what's that caused babies to...

Denise McAllister: Yes. That is correct. That is correct. It was definitely responsible for limb malformations and those sorts of things. It was used primarily in Europe, I want to say back in the '60s.

D31: It was the '60s.

Denise McAllister: For pregnant women.

D31: And here not very much.

Denise McAllister: I'm sorry?

D31: It was here used in the United States for a year or two years until...

Denise McAllister: And then a pharmaceutical company brought Thalidomide back to life because they recognized its use in cancer care. However, it certainly has been plagued with fetal embryo death as well as malformation of the limbs.

D31: (inaudible 36:45)

Denise McAllister: You're right but the goal is to for Thalidomide, or Lenalidomide, its newer agent generation analog. The goal is to keep those drugs away from people who are child bearing potential and, of course, you know, it even in people who are... who do... who can benefit from those drugs because it's their utilities in multiple cancers, not just myelodysplasia. There's what

we call a REMS program where everyone has to be registered. The physician has to be registered to dispense the drug or to write for the drug, excuse me. The pharmacy has to be registered to dispense that agent. The patient has to be registered today to get Revlimid making sure they are aware of the risk of the drug and that they will not let it fall into the hands of someone where it may cause harm.

D31: They regulate you pretty well.

Denise McAllister: Yes.

D31: I mean, you get surveys every month.

D32: What is it? An oral drug?

Denise McAllister: It is. It's a capsule.

D31: They ask the questions all the time. It has to go through the (inaudible 38:07) cancers (inaudible) folks who are to get it.

D32: I'm on morphine, so they did the same thing with that. Yeah. After I got it I go sell it.

D31: That's right. Yeah. It's very expensive?

D32: They had (inaudible 38:22) controls on it.

Denise McAllister: Correct and that's because of that as a known side effect and wanting just to protect everyone's safety and when you think about the routes in which medicines are given today, cancer drugs, swallowing a capsule and it works or medicines such as the agent you're on. We used to just give it solely IV and people had to be in the hospital to get the drug. Today, you're able to get it in a shot form and be on your way.

D33: Has anyone been on chemotherapy this? That is a treatment, but probably not one of the first choices. Right?

Denise McAllister: The question is about chemotherapeutic agents and chemotherapy certainly plays a role in the care of folks with high risk myelodysplasia or those folks who have transformed to acute myelogenous leukemia, but today given the agents that we currently have FDA approved, those generally speaking are the first choice because they have a very well tolerated side effect profile and they can be effective. When someone has developed acute leukemia and they do not respond to the drugs that are currently available then to move onto chemotherapy can be a next logical choice and when we think about that it tends to be agents that we've used for years to manage acute myelogenous leukemia. So, it's really is a matter of taking

advantage of every agent that's available that can make a difference, but also something that's important is truly not ruling out the role of a clinical trial and I'd love to hear what your thoughts are even after today's presentations, but early on in my career, I used to think, boy, people are guinea pigs in clinical trials, but you know what? That was me being a young, naïve nurse who should have never had that way of thinking because I see it and, of course, not every clinical trial is for every person, but I have to tell you if there is a clinical trial that in theory a clinical feels that a patient can benefit from there's nothing more disheartening if that patient turns out to not be eligible for that trial. So, when folks are doing well with the drugs that we currently have available, that's fine. We know what these agents do. We know what their role is in the lives of people with myelodysplasia, but we also recognize the gaps that still exist and if you think about transplant still being the only or the best potential cure, we know that Vidaza has survival data. You saw a graph of someone who's been on Lenalidomide for 10 years and the median duration of response for that agent is about 2.2 years. So, you have people who can do well, do well for many, many years on the agents that are available, but when you recognize what goes on behind the scenes like those mutations that were identified through that genomic sequencing, I mean, that is... that can really make a difference in how well someone's going to do long term. So, if there's a potential therapy that is not FDA approved that someone can benefit from, I wouldn't rule it out. It's a matter of getting the information and having good knowledge if this potential... if this trial is something that you can potentially benefit from.

D34: Well, the alternative is dying, so I mean it's like why not take it?

Denise McAllister: Yeah. I mean, you raised a good point that knowing what we know about this disease and the majority of folks do die as a consequence of the disease, that if it's right for that person to enroll in a clinical trial to try to turn things around if it is an option. Yes, ma'am?

D35: Where are the clinical trials now? Anyplace?

Denise McAllister: Oh, my gosh. All over. A great place to look is certainly when it comes to myelodysplasia is the Centers of Excellence, so... and those will be listed on the MDS Foundation website.

D35: (inaudible 43:07) the paper you gave us in the book six, page eight.

Denise McAllister: And you can log onto the website because the Centers of Excellence will be listed there. Also, you can go to NIH.gov to see what clinical trials may be available, but also even in your own communities, there may be clinical trials that are being run through your own oncologist, but to seek out a Center of Excellence to see what's available, have a discussion with your local oncologist as well.

D36: This a Center of Excellence here in Franklin?

Denise McAllister: Yes.

D36: And there's one in Omaha, I think.

Denise McAllister: They're all over. I have three in my area, four in my area in Florida. So, there's... but not... some people can travel a long way to reach a Center of Excellence when it comes to MDS care. I just happen to live in Florida.

D37: Where in Florida are you?

Denise McAllister: Tampa.

D37: There's one in New Jersey, two.

Denise McAllister: So, any comments or thoughts? Do you have a different way of thinking about that now? You're going to reserve the comments.

D38: I was just thinking he's doing well. Why mess with it? I mean...

Denise McAllister: Agreed. No, I'm with you.

D38 He started taking (inaudible 44:45) and got sick on it.

Denise McAllister: Think about when people need treatment, when people should start active therapy and, again, what you have in that binder can certainly help you. So, it really is a matter of when people need therapy knowing what agents are available today and their role, but I would not rule out a clinical trial for someone who needs it and it really doesn't matter what the cancer is. Someone may potentially benefit from an agent that can make a difference and that comes from me as a healthcare provider really wanting the best for people at the end of the day.

D39: Dr. DiPersio, he had a totally different thought on antibiotics like that Levaquin that they had me on and the way he talked was don't start until you have an infection.

Denise McAllister: The question is what is the role of antibiotics in someone who has limited infection fighting ability and I have to tell you that's been my experience, as well, that we don't... I have never routinely prescribed prophylactic antibiotics. We tend to wait until they're needed and if someone is developing recurring infections then it may be time to consider what's happening in the bone marrow and possibly provide active therapy, but antimicrobials definitely play a role and if someone needs them they need them.

D39: When I took the 500 milligram Levaquin and I was having no problems except I have MDS and I'm tired. It's just could go in and go to sleep at 10 o'clock in the morning, but it gave me

thrush and it made my food taste terrible and he said that my... your tendons could break if you took it too long and I just... I couldn't stand the 500 milligrams. So, I have the 250, but I just take it... just start taking it when I start having the fevers.

Denise McAllister: Thrush can certainly be of a consequence to antibiotics. It happens. It definitely happens and so we give antifungals for that and clear it up and keep moving, but definitely thrush can affect the taste of food. It most certainly can.

D40: If you didn't have fevers, why would they put me on that?

Denise McAllister: It's just a different philosophy. That's all. It's just a different philosophy. That physician, I'm sure, is trying to do absolutely everything he can to protect someone from getting infected. So, it's a different philosophy. I have... There's one gentleman that comes to mind in my practice. He's had myelodysplasia for a number of years and did pretty well until, gosh, probably the past year and a half and his CBC numbers really started to drop and he has been walking around with a total white blood cell count of...on good days it's 1,000, total white blood cell 1,000, but his infection fighting ability, his ANC or neutrophil count tends to run about 200 and on some days it's 100 and in a year and a half he has never developed an infection. So, he's someone despite the low numbers, he's still managing to do well. So, he's someone who we've not given prophylactic antibiotics to and I'm not necessarily saying it's right or wrong, I think it just all depends on the physician's philosophy and what that person is trying to do to protect someone from getting infected.

D40: Somewhere in one of these books it says that a lot of people can live with low counts.

Denise McAllister: That is correct. That is correct and this gentleman, he's certainly... he's an example of that, but, of course, when you take that and someone whose blood product dependent and so you have to look when it really is appropriate to treat and this gentleman is certainly getting active therapy now.

D40: My GI doctor asked me why they had me on that and he told me that that could ruin my immune system and GI area and he told me he had (inaudible 49:35) over the counter. It's a probiotic and it would help a lot. I take that all the time.

Denise McAllister: Good. Yeah. Antibiotics can certainly delete the natural flora in the gut and lead to diarrhea and lead to infections specifically like C. difficile. So, that sounds like he's giving you some good advice as a preventative measure.

D40: Well, he also the one who... He point me to a hematologist in the first place. None of my regular doctors... they just kept saying...like it was nothing my blood counts went down, going down.

Denise McAllister: Tell me about you three. You're kind of quiet. If you don't mind sharing. What is your interest in being here today if you don't mind? So, any thoughts on what you've heard today?

D41: There was a lot.

D42: A lot more knowledge of this.

Denise McAllister: How about you?

D43: I understood (inaudible 50:49) the name of it.

Denise McAllister: So, now you know why good hand washing is important for people entering the home and staying away if you have a cold or are sick.

D40: Like I said, I shouldn't have any (inaudible 51:10) on my hands (inaudible 51:12). This is my husband and he's very quiet.

Denise McAllister: Yes?

D44: I have a question for those of you who do have MDS here. There's such as this nice lady and this gentleman here and this lady down here. How has it really changed your activity levels that you before you were diagnosed now after you found out you have the disease? What do you differently in your line of activity lives?

D45: Before I pushed myself and I was tired, but we garden and...

D44: Do you still garden?

D45: (Agreement sound)

D44: You're out there still growing all the good stuff.

Denise McAllister: That's a good question.

D45: But I would get real tired like I said sometimes at 10 o'clock in the morning I would just have to rest and go take a nap.

D46: There's nothing wrong with that. I don't have MDS and I do that (inaudible 52:21)

D45: Really I had to take a nap. I couldn't go on.

D44: Anybody else?

D47: My bucket list has gotten a lot bigger. So, I try to do more.

D44: You try to do more and you seem to...

D47: (inaudible 52:39)

D44: You're checking the list off.

D47: Some days you do twice as much and you take one or two days later, but that's...

D48: I keep reminding that we're also getting older. You do less.

Denise McAllister: How about you?

D49: I really don't (inaudible 53:00). I'm just tired all the time now and just work your way through it.

Denise McAllister: How about you, sir?

D50: She does. Just still do the best thing.

Denise McAllister: How's it changed you with him having myelodysplasia?

D49: I think it's changed me. We've been to oncologist dietician and I think like cleaned my fresh vegetables (inaudible 53:29), but I think it changed my life. He's still working. He's 77 years old. I think we're very fortunate.

Denise McAllister: How about you two? You don't mind sharing. How has having an MDS diagnosis changed you? What do you do differently?

D50: I just got to be more careful because anytime I nick my lower legs, they get infected. I've had five infections in the last three years. Other than that I'm happy. I do everything the same way. I just got to be more careful, but before you could get a scrape and I nicked myself with a weed eater and got infected. We (inaudible 54:17) our pants and long shoes and (inaudible 54:21).

Denise McAllister: So, it's being more aware, more cautious, but you still weed eat your own yard. So, you still live every day. That's it. Any other questions, comments or thoughts?

D51: (Attendee), the 5Q. Initially, he had that but with treatment that's been on a (inaudible 54:54). Is that normal or is that what's to be expected or...?

Denise McAllister: That's a very good question. So, he had a chromosome abnormality that went away with treatment. Is that what you expect and that's really what you want to see. You do want to see that. Sometimes though we don't see that when reassessing bone marrow biopsies after treatment. It can be better, though. I mean, overall the bone marrow biopsy itself can be better, but those chromosome abnormalities can still exist or some that existed before aren't there. Some may still be present. Others may surface, but it's all about how someone is doing at that particular time, are they still... are they on the proper treatment and does that bone marrow biopsy or those chromosome abnormalities trump in deciding therapy? But you definitely want to see if there's a chromosome abnormality that exist that you commonly see in myelodysplasia and you give someone therapy and that chromosome abnormality is not there anymore. That's an improvement.

D51: I mean, when they said he went into remission we were very excited and then they said and so we'll continue treatment forever. We're like...

Denise McAllister: As long as the therapy is working because, again, the rationale is that if you stop treatment what's the likelihood that that clone is going to resurface?

D51: But if you had the transplant then it shouldn't?

Denise McAllister: Well, transplant is the best option for cure. So, in the most perfect world...

D51: Our physician said that there's only a 40 percent survival rate after five years.

Denise McAllister: Yeah. I think the comment that was mentioned earlier and I wholeheartedly agree with this is that when you're looking... and you can read in the book as well. That will give you the guidance, but if you're considering going to transplant or transplant is something that's being recommended is to definitely who in your area has the experience with transplant and go to that transplant center. If you have an MDS Center of Excellence then I trusts that there's a transplant department there because they see patients with myelodysplasia and will take those folks to transplant. So, it's a matter of looking at the center, how many transplants have they done in myelodysplasia and what are their outcomes. I would ask what are their one year outcomes? What are their five year outcomes? So, it's about looking to see the experts are in your area and asking those questions and, again, this *Building Blocks of Hope* can give you some questions to ask and the MDS Foundation can also help with that and identifying centers.

D51: They've been great. It's been wonderful we could have them on (inaudible 58:09) to be part of their website and to be able to...

Denise McAllister: Right. And I... I mean, obviously, I'm here because I'm very passionate about folks living with myelodysplasia every day and wanting people to have absolutely the best outcomes that they can have. When it comes to the MDS Foundation, I'm such a huge fan and not because I'm part of the leadership board, but because of what they do for people and when you really think about an organization that's pure at heart and doing the right things for folks, this is the organization and I'm very... have a huge appreciation for Sandy Curtain's vision. As I said, this binder truly is the best go to resource for folks living with myelodysplasia looking at therapies, asking the questions, empowering everyone, patients and caregivers to become an active participant in care, asking perhaps what may be tough questions of physicians, getting that second opinion and really advocating for your care and having a good understanding, so you have comfort in your mind of truly what is in your best interest long term.

D52: My doctor at KU recommended that I start taking white blood cell (inaudible 59:46). My doctor in St. Joe says no because he thinks that accelerates MDS into AML. What's your thoughts on that?

Denise McAllister: That's a good question and I am certainly not going to get into the debate over your two physicians, so with that being said there definitely are subsets of folks who can benefit from Neupogen injections or shots to boost their white blood cell count. The lower risk patients and people who, for example, have refractory anemia and refractory anemia with ring sideroblast, those folks getting Procrit by adding Neupogen to that we see synergy in raising their hemoglobin and Neupogen shots may be given once a week, for example, with Procrit. So, it certainly has its role. If someone and this gentleman who I use as an example, this gentleman who's been walking around with a neutrophil count of 100 or 200 now for many, many months, he's not had an infection yet and he is someone definitely with higher risk disease was asking me about Neupogen shots and I certainly told him that if the benefit outweighs the risk, I will give him Neupogen. Should he become infected and recognizing his infection fighting ability is very limited, I will give him Neupogen shots to help improve that so he can get over that infection if it's warranted. Definitely there is a concern that by giving someone Neupogen with higher risk disease, does that accelerate them going into acute leukemia and there definitely has been some studies to say no. My experience has been that with people with high risk disease who are on active therapy in order to keep them therapy, we may need to give them pulses of Neupogen because when someone has very limited infection fighting ability, we're giving them therapy that is myelo suppressive meaning their blood counts drop further and they may be slow to recover. So, could someone benefit from a little bit of Neupogen then? Maybe. So again, I think that's where for you to look at the experience of the physicians that you have, what is their background when it comes to treating folks with myelodysplasia, who has the greater experience, asking that question of the person who's recommending it. Is this going to throw me into full blown acute leukemia? Ask the question and hear what he has to say or does the benefit outweigh the risk. So does Neupogen have a role in people's care with myelodysplasia?

D53: Neupogen. Spell it.

Denise McAllister: N-E-U-P-O-G-E-N. It's growth factor for white blood cells just like Procrit is a growth factor for red blood cell support. So, does it play a role? Yes, but, again, that's where it needs to become individualized and seek out the expert's opinion, ask the right question and have comfort in your own mind that it's the right thing to do or not.

D52: And that's what I want. That's what I go for that I'm comfortable with what's going to happen.

D54: What's your doctor's name?

D52: (inaudible 1:03:30)

D54: That was mine.

D53: Oh, was it?

D54: Was. Threw that out there, but yes.

D53: So, what was the reason?

D54: Attitude.

D53: Really?

D54: Oh, gosh.

D53: (inaudible 1:03:46) is mine. (inaudible 1:03:50)

Denise McAllister: Yes, ma'am?

D55: Is there a frequency at times that people get bone marrow?

Denise McAllister: Yeah. That's a very good question and...

D55: And in addition to the frequency, what would be the reasons for it?

Denise McAllister: Yeah. That's a good question. Sometimes we can come across folks who do not want a repeat bone marrow. So, we look at their CBC. We may sometimes have the ability to check markers off their peripheral blood such as their cytogenetics or FISH. Generally speaking when someone starts a new therapy to check a bone marrow about four months into treatment is not a bad idea. It's not wrong.

D55: But you not... I don't do anything.

Denise McAllister: As long as your hem parameters are stable, there's probably no sense in rechecking.

D55: I signed up for some... surely, you want to be in a study. Yeah, yeah, sure. So, I haven't had a bone marrow and with that, but...

Denise McAllister: And typically in the study, you're getting looked at with the fine tooth comb and that's what they were doing for you. Yeah. So, if there's reason based on changes in the CBC that gives the physician a hint that something just isn't right, that can be an indicator. If someone's on treatment and you want to look at the response of treatment that's an indicator or if someone's doing well on a treatment to do a bone marrow once a year may not be a bad idea or if someone doesn't want a bone marrow at all then you wait until changes are occurring that warrant it. So, there's not a standard answer and I think Audrey would like to pick up the evals if you have those ready pass them to the end.

D56: (inaudible 1:05:49) if you ask. How many bone marrow aspirations are done that those people who are very experienced it's not nearly as bad as if you get someone new.

D57: I've had four now. The worst one was by a doctor.

D56: I mean, that one was horrible.

Denise McAllister: Yeah. I hear you and today a lot of...

D56: I think it's worth it to ask that question because you (inaudible 1:06:26)

Denise McAllister: And a lot of people will have like a bone marrow service or it can be done under interventional radiology, for example. So, they can definitely be done in a variety of settings.

Audrey: There is also (inaudible 1:06:44) form in your package. I think it was just put into *The Building Blocks of Hope* (inaudible 1:06:49). If you can sign that and return it to me and...

D57: There are two. I have two. Is it just that I happen to get two?

Denise McAllister: Any other closing remarks?

Audrey: One is for you to keep and if you (inaudible 1:07:13) for coming today.

(Applause)

Denise McAllister: Thank you. It's my pleasure and I wish all of you very, very well and if there's anything that I can do for you in the future, please do not hesitate to reach out.

D58: I would love to visit Florida.

Denise McAllister: Please do and I want to come to your family reunion.

D59: Okay. We'll make this travel happening in Florida.

D60: Since my white count is so low is there really more chance of getting infection if I just get bone marrow biopsy (inaudible 1:07:54)

Denise McAllister: That has not been my experience. No. We do bone marrows with low platelets, low white blood cells. Is it a risk? Yes. But, again, my experience is not. They'll help you with that.