

## Understanding Transplant for MPN Patients

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### **Jorge Cortes, MD**

Chair of the CML Section in the Department of Leukemia  
MD Anderson Cancer Center

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### **Andrew Schorr:**

We're going to talk a lot more about the new medicines and who responds to which one. We have a whole session of Q&A. I just want to move along for a second. We mentioned, remember a while ago, the blast situation—and measuring that—and some people get very sick, progress to that. So I imagine, Dr. Cortes, that relates to transplant, so help us understand where transplant might come in for somebody, and what is it?

### **Dr. Cortes:**

Sure, yeah, and transplant is important because, it essentially, the principle is, if you have a disease of the bone marrow and you have somebody who can give me a new bone marrow, why don't we just replace my bone marrow and get rid of the whole problem? And that's a principle of the bone marrow transplant or the stem cell transplant, and here, I, perhaps could clarify.

Because sometimes, we've created this confusion about, well, I don't really need a bone marrow transplant, I need a stem cell transplant. We're essentially talking about the same thing. The stem cell is the mother cell in the marrow that starts the production of the blood. Think about it as the egg that gives rise to a baby, right? It starts with one cell.

The egg, so it's one cell, little by little, that cell makes more cells, and then eventually some cells start becoming the brain and some cells start becoming the liver and some cells start becoming the skin, etc. there. But it all comes from that one cell.

So that stem cell in the bone marrow is that one cell, and little by little, it makes more cells, and then eventually some become the red cells. And some become the platelets, and some become the white cells and the white cells can be different types. So when we're taking a bone marrow for a transplant, taking it from a donor, we collect their bone marrow and give it to somebody else.

Really, what we want from that bone marrow is that stem cell. That's the cell that's going to be able to engraft, that's a seed. That's the one that's going to be able to get into somebody else's body and start the production of blood. Many of the other cells that we collect from the bone marrow we don't really care about. They're probably not going to even take or anything—only those stem cells.

So, initially, we took those stem cells from the bone marrow. Now, we sometimes take them from the blood and that's when we started thinking about changing the name. We say, wait a minute. What are you, you mean you're going to do a bone marrow transplant, but we're not taking bone marrow from the donor? Well, what is that?

And that is that, what we care is about those stem cells, and we have developed methods where we can mobilize those stem cells from the bone marrow into the blood, collect them, and give them to somebody who has a bone marrow disease. So why do we use it in these disease? Well, now, there are instances where they, you know, these procedures have risks, significant risks, both of complications and even death.

It's gotten a lot better, a lot, a lot better, and it's still getting better, but there are still those risks and there is, you know, potential for these risk consequences. So we don't use them on everybody. We use them on patients where this risk-balance, risk-benefit ratio, is adequate. We have those high risks, much higher risks than we've had, you know, any of the drugs that we've discussed.

Well, is it justified? So when the risks of the disease are much higher, then we say, well then this risk, which is high, it's justified by these much higher risks. So essentially, we consider a transplant for patients that have much higher risk of the disease in myelofibrosis, goes from that scoring system that Dr. Mesa showed us.

Those patients in the more advanced risk categories, that's where we start thinking about the transplant. But in addition, we need other factors so that we have a donor, because if there's no donor, well, of course, there's no transplant. And what is the risk for that particular patient, you know?

That has to do with a lot of things, with the age of the patient, with the type of donor, with other factors, you know, the lungs, the kidneys, the heart, yeah, all these things play a role. If, with those, the risk is reasonable and then it's balanced by the risk of the disease, we consider transplanting those patients. So transplant is not for everybody. It's not justified for everybody.

But there are circumstances where we think the transplant is a good option for patients, and it's not necessarily, like, a last resort kind of thing. There's always a matter of priorities. When is the right time? And that's something that's an important conversation to have with your doctor.

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