When to consider iron chelation therapy for a transplant-eligible patient

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Welcome to *Managing MDS*. I am Dr. Stuart Goldberg, and today I am going to briefly discuss with you when to consider iron chelation therapy for a patient who is transplant-eligible.

Many of us will see patients in our office with myelodysplastic syndrome or some other hematologic malignancy who we think in the future may need a bone marrow transplant; but right now they are not really ready for it. This is especially common in MDS where we have patients who may come in with a low-grade myelodysplasia, but we know that over time they will get worse and they will get sicker. At that point, we may think about hypomethylating agents; but if they continue to progress, or especially if they are young, in the future we may think about bone marrow transplant.

We also know that these patients may be getting transfusions for their lower-grade disease, and that over time, those transfusions may build up the iron and lead them to developing evidence of iron overload. So why do these two things intersect? We know that patients who come to the bone marrow transplant with a high iron level are more likely to have complications during the transplant. There are certain fungi and certain bacteria that love iron, so an iron overloaded patient who comes to transplant is more likely to develop one of these fungal infections. We also see that iron can damage the liver and cause liver abnormalities, and so the patients who come in to the transplant iron-overloaded are more likely to develop liver toxicities, veno-occlusive disease, and other problems. For reasons that are not really understood, patients who come in to the transplant iron-overloaded may actually have higher rates of graft versus host disease. What is clear in both the fully ablative and the non-myeloablative settings is that patients who come in to the transplant with elevated ferritins have decreased survival.

Therefore, we want to try to bring a patient to a transplant in the best possible situation and give the transplanter the best chance of getting a cure and decreasing the toxicity. The problem with iron chelation therapy is that it takes a long time. The oral medications that we use, and even subcutaneous drugs that we can use to bring out the iron in patients, take months to years to bring down iron levels. We want to stay ahead of this because you do not want to be following a patient with low-grade disease, giving the transfusions and having a buildup of the iron; and then all of a sudden, their disease has accelerated and they need a transplant. Now, suddenly, you need to bring them to

transplant but also bring down the iron acutely, which you cannot do. In my younger patients who I think even 5 or 10 years from now may need a transplant if they have MDS, I want to stay on top of it and watch their iron levels. I might even initiate my iron chelation therapy earlier than I would do in an older patient who is not going to go to transplant, so that I am always staying ahead of it to prevent the patient, when they eventually need a transplant, from being iron-overloaded.

That is my approach to a younger patient with MDS. I think of 5- and 10-year horizons of when they might need a transplant, and stay ahead of the iron so that I do not have to do an emergency situation where I am trying to bring down iron as I am rapidly trying to bring the patient to transplant.

Hopefully this is helpful in managing your patients. This is Dr. Stuart Goldberg for *Managing MDS*. Thank you.