

[MUSIC PLAYING]

CARRIE THOMPSON: Things are improving for patients with hematological malignancies. Diseases that used to be death sentences are now chronic diseases. Patients are living longer and longer. We're seeing this every day.

ASHER CHANAN-KHAN: There are many blood cancers that we are effectively able to eradicate. We can cure these cancers with a high level of probability.

RUBEN MESA: The pace of research, the genuine advances that are being made, the real cures that are being found-- it's a very exciting time. There's almost 100 different hematologic cancers, with new drugs being approved every week that impact patients with hematologic cancers. Mayo Clinic Hematology has been directly involved with the approval of every new FDA approved therapy hematologic malignancies, whether as a clinical trial site, or actual leadership of the clinical trials. And that provides a tremendous benefit both to our referring physicians, as well as our patients.

CARRIE THOMPSON: Hematological malignancies are complex. Not only is making the diagnosis difficult, but determining the correct treatment plan for each patient, given the vast number of treatments now available, can be quite complicated.

ASHER CHANAN-KHAN: There has been a tremendous influx of new therapies. And these new therapies are not in the same way that we used to do chemotherapies. They are targeted therapies, they are immunotherapies, these are antisense therapies. There are various kinds of treatments targeting the cancer cell from different angles.

CARRIE THOMPSON: We have to individualize it. So certainly, surgery can be part of the treatment armamentarium. Radiation therapy may be part of this, immunotherapy, traditional cytotoxic chemotherapy, and new ways of delivering therapy, too. Clinical trials with vaccine therapy or other modalities.

ASHER CHANAN-KHAN: We integrate genomic medicine, immune system therapies. We look at what is happening in a cancer patient where their immune system is down or their genetic mutation is directing unchecked growth of cancer cells. And should we be stopping the cancer cell or boosting the immune system at the same time?

RUBEN MESA: Immune therapies are incredibly important in cancer, and incredibly important, in particular, in hematologic cancers. There is a variety of ways that they can really impact trying to make a difference for a cancer, whether it's utilizing our body's our immune system, or trying to use those pathways to really try to attack foreign invaders.

CARRIE THOMPSON: These therapies stimulate the immune system. And therefore, the side effects are very different than traditional chemotherapy. We're not dealing with hair loss and nausea and vomiting. We're dealing with, basically, a massive autoimmune response. And therefore, the side effects are definitely different, and they can be severe. Therefore, understanding the side effects and providing excellent supportive care to the patients as they're undergoing these treatments is crucial.

RUBEN MESA: Stem cell transplant or bone marrow transplant, all equivalent terms, are incredibly important ways in which we hope to make a difference for patients with hematologic cancers.

ASHER Well, you take the immune system and the bone marrow of a patient out, completely obliterate it, and take a new **CHANAN-KHAN:** system from another person and put that in. And that immune system will identify the cancer and eradicate it.

RUBEN MESA: Allogeneic stem cell transplant cells from another individual as a donor are crucial in particular for diseases such as leukemias, acute myeloid leukemia, acute lymphocytic leukemia, myelofibrosis, myelodysplastic syndrome. These are some key areas where we consider allogeneic transplant. The second is an autologous transplant, where we try to use that healing power to protect an individual's stem cells while they receive very important therapy against diseases like myeloma and related protein disorders, and lymphoma, as the key ways we treat these diseases.

CARRIE THOMPSON: Patients hopefully will have many years of life ahead of them. And we know that the transition from active cancer care to survivorship can be challenging. Adolescent and young adult survivors oftentimes have issues with interrupting their education or starting a family. We have to pay attention to those particular issues in that age range and work with our reproductive endocrinologists, as well as social workers and other supportive care individuals, depending on the patient's needs.

Mayo Clinic works with hematologists and oncologists outside of the Mayo system all the time. Many of our patients don't live in our local area, and they travel to be seen. Some patients will receive all of their care here, and some will receive part of their care here and part with their local provider. We try to do what's best for the individual patient.

RUBEN MESA: The communication between Mayo Clinic and our referring providers is essential. We have to work as close team with good communication in both directions for the best outcomes for patients.