

## Protecting Your Heart after Transplant and CAR T-cell Therapy

May 2nd, 2024

**Presenter:** Gabriela Sanchez-Petitto, MD, The Ohio State University Comprehensive Cancer Center

Presentation is 28 minutes long followed by 13 minutes of Q&A.

**Summary:** Transplant and CAR T-cell therapy have cured or prolonged the lives of many people with blood cancers. However, survivors may experience cardiovascular complications in the short and long term. Learn about these potential complications and steps you can take to prevent them.

### Key Points

- Stem cell transplant survivors have twice the risk of developing heart problems later in life than the general population.
- Cardiovascular events such as arrhythmias, cardiomyopathy, myocarditis, or heart failure occur in approximately 17 percent of patients who receive CAR T cell therapy.
- Adopting a healthy lifestyle that includes a healthy diet, exercise, and some medications can reduce the risk of heart problems.

### Highlights

(03:19) Cardiovascular complications include, among others, cardiomyopathy (a disease of the heart muscle), arrhythmia (irregular heartbeat), high blood pressure, pulmonary hypertension (abnormal blood pressure in the lungs), and pericardial effusion (build-up of too much fluid around the heart).

(03:48) Many of these complications may be caused by chemotherapy given during the conditioning regimen prior to transplant, medications to prevent graft-versus-host disease, and other complications that can occur during a stem cell transplant.

(07:17) Graft-versus-host disease has been linked to the development of arrhythmias, a slow heart rate, pericardial effusion, and, in the long term, the development of coronary heart disease.

(09:36) Risk factors for developing cardiovascular disease after transplant include older age, whether the patient received medications such as anthracyclines, doxorubicin, or daunorubicin, whether patients have hypertension, diabetes, or smoked cigarettes before transplant, or received radiation therapy to the chest or thorax.

(11:03) High blood pressure, irregular heartbeat, pericarditis, and heart failure are complications that sometimes occur during the first 100 days after transplant.

(12:01) Hypertension significantly increases the risk of developing coronary and arterial diseases. It can eventually lead to complications such as myocardial infarctions, heart failure, and arrhythmias.

(12:51) Atrial fibrillation occurs in two to 10 percent of patients who receive a stem cell transplant and can predispose them to developing blood clots that can spread to the brain and cause a stroke.

(17:45) Valve disease and coronary artery disease are late complications that occur later than 100 days after transplant.

(20:24) There are treatments available to protect the heart.

(24:59) Cytokine release syndrome, a common complication after CAR T-cell therapy, can cause fever, a drop in blood pressure, an increased heart rate, and a lack of oxygen.