

# Hematopoietic Stem Cell Transplants and Cardiovascular Death

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The use of hematopoietic stem cell transplantation (HSCT) to treat both malignant and non-malignant conditions has increased markedly over the past few decades. While chronic graft-vs.-host disease and recurrent cancer are the most common cause of early (within 2 years) treatment-related mortality, a team of researchers from Fred Hutchinson Cancer Research Center recently showed that HSCT recipients also experience a higher burden of cardiovascular events and higher risk of cardiovascular death in the long-term.

Dr. Eric Chow, Clinical Research Division, and a group of Center-based clinicians and researchers, recently conducted a retrospective cohort study to compare cardiovascular hospitalizations and death rates in a cohort of 1491 patients who received allogeneic or autologous HSCT at the Hutchinson Center over a 21 year period (1985-2006) and who survived at least 2 years after their procedure, and in a population-based sample identified from Washington State drivers' license files.

Nearly one third of all HSCT recipients experienced a cardiovascular-related hospitalization during the study period, compared with 11.2 percent of the comparison group. Transplant recipients experienced significantly greater risks of ischemic heart disease, cardiomyopathy or heart failure, stroke, vascular disease and rhythm disorders. They also had a high burden of major cardiovascular disease risk factors including hypertension, renal disease, dyslipidemia and diabetes mellitus, and had a significantly higher rate of cardiovascular mortality than the general population.

Disease relapse after transplantation was associated with an increased risk of cardiovascular death. Chow and colleagues are now investigating transplant and pre-transplant exposures in greater detail to see if specific characteristics of one's transplant/cancer therapy may be associated with the risk of cardiovascular disease.

[Chow EJ, Mueller BA, Baker KS, Cushing-Haugen KL, Flowers ME, Martin PJ, Friedman DL, Lee SJ. 2011. Cardiovascular hospitalizations and mortality among recipients of hematopoietic stem cell transplantation. \*Annals of Internal Medicine\* 155:21-32.](#)