

Lack of private insurance contribute to higher deaths among black heart transplant patients

EurekAlert

Transplant surgeons at Johns Hopkins who have reviewed the medical records of more than 20,000 heart transplant patients say that it is not simply racial differences, but rather flaws in the health care system, along with type of insurance and education levels, in addition to biological factors, that are likely the causes of disproportionately worse outcomes after heart transplantation in African Americans.

In a report on the review to be published in the *Annals of Thoracic Surgery* online June 1, the Johns Hopkins team showed that race matching donor hearts did nothing to extend the life in organ recipients. Race matching is the practice of transplanting donor hearts into patients of the same ethnic group. White donors would be matched to white recipients, and the same would apply to blacks, Hispanics or Asians.

"It does not matter whether a white, black, Hispanic or Asian donor heart is transplanted into a patient of any other particular race," says senior study investigator and Johns Hopkins transplant surgeon Ashish Shah, M.D. "Other factors must be the reason for any differences in how well people do after transplantation, in particular, why blacks have poorer outcomes."

In what is believed to be the largest and most detailed review of medical records ever conducted on the subject, the Johns Hopkins team combed 20,185 North American transplant patients' records. All received a donor heart between 1997 and 2007.

Researchers found that 61 percent of heart recipients were race matched (12,381). Among blacks, the death rate after five years was the same, at 35 percent, whether donors and recipients were race matched or not. The same was true among whites, at 26 percent, and among Hispanics, at 28 percent. (Although trends appeared to be the same for Asians, the number of transplants in Asians was not statistically large enough to provide valid percentages.) Death or survival rates were consistent for all timeframes, within a month, three months, six months or a year after transplantation.

Study investigators found that race matching did little or nothing to close the significant gap in blacks' survival rates. Whether or not African Americans received a heart from a black donor, they faced a 46 percent higher chance of dying within 10 years after heart transplantation. Specifically, 45.8 percent of blacks were alive and well after 10 years, a rate 11.4 percent lower than for whites and 10.8 percent lower than for Hispanics.

Researchers say previous reports from nearly a dozen other academic medical

centers offered conflicting accounts about any potential benefits from race matching. They say the latest study findings help set the clinical record straight by pooling data from more than 140 hospitals licensed to perform heart transplants instead of relying on data within individual hospitals.

Shah says the data "really prompts us to re-evaluate everything that we do for our more vulnerable patients and to tailor our efforts to the specific needs of each patient, especially African Americans, if we hope to fix racial disparities in surviving heart transplantation.

"This problem is not just about biology or race, it is also about the health system that supports our patients," says Shah, an associate professor at the Johns Hopkins University School of Medicine and its Heart and Vascular Institute.

He also notes that transplant patients can now put their minds at ease that having a racially matched donor heart will not help or hurt them.

Lifting survival rates among blacks, who represent 15 percent of all heart transplants, will, Shah says, require further study of which life-extending factors may work, such as antirejection drug dosages, more stringent follow-up to ensure patient compliance with drug regimens and scheduled appointments, and education about early signs of infection and possible organ rejection, including fever, shortness of breath, fatigue, and swelling in the arms and legs.

Among the researchers' other key findings were that such problems related to organ rejection within the first year, regardless of race, were tied to insurance and education. Patients with public insurance, specifically Medicaid, had a 30 percent higher risk of needing some kind of antirejection treatment and a 39 percent higher risk of dying than transplant recipients with private insurance. Transplant recipients on Medicare did not fare well either, with a 12 percent higher risk of dying than those with private insurance. Having a college education lowered the overall group's likelihood of having a rejection-related problem with their transplant by 12 percent.

In the study population, 20.5 percent of black transplant recipients had Medicaid insurance compared to 8.8 percent of other races, and fewer had private insurance (49.9 percent) compared to others (63.6 percent). The African-American group as a whole had a lower percentage of college graduates than other races (at 40.6 percent and 50.3 percent).

Black recipients also had a higher degree of tissue antigen mismatches with their transplanted hearts compared to other groups (at 65.4 percent and 55.6 percent.) The better the match, Shah says, the better the chances that immunosuppressive drugs will work over the long term to prevent organ rejection. Hypertension and gender mismatches, factors known to up the chances of dying, were also more widespread among African Americans.

Lead study investigator Jeremiah (Geoff) Allen, M.D., says a combination of these circumstances in African Americans likely contribute to their poorer outcomes.

Allen, a postdoctoral research fellow in cardiac surgery at Johns Hopkins, says the team's next steps are to identify which combination of factors stands out among those blacks who survive long term post-transplant and those who do not. Some 45 percent of African Americans with donated hearts, he notes, survived longer than 10 years.

An early identification system for those at higher risk of rejection and death, and data on any differences in treatment protocols could help narrow the survival gap for blacks, he says.

"This research is key to correcting the survival disparity in African Americans in surviving heart transplantation, and helps us learn how to take better care of some of our most high-risk transplant recipients," says Allen.

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