Biopsies before transplantation do not determine success of donated kidneys

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Biopsies of donated kidneys provide little information for determining the suitability of organs for transplantation, according to two studies appearing in an upcoming issue of the *Clinical Journal of the American Society of Nephrology* (CJASN). The findings suggest that other methods are needed when weighing whether to discard or transplant a deceased donor kidney.

The quality of donated kidneys is fundamentally important for the longevity of kidney transplants. Clinicians often use kidney biopsies to assess kidney health before transplantation. Chirag Parikh, MD, PhD and Isaac Hall, MD, MS (Yale University and Veterans Affairs Medical Center) led a team that looked for associations between biopsy-reported kidney injury at the time of organ procurement with subsequent kidney transplant outcomes. "We were hoping to expand our knowledge about these associations and explain inconsistent findings in the medical literature by performing the largest multicenter study of its kind to date," said Dr. Hall.

Between March 2010 and April 2012, the researchers biopsied 651 kidneys (taken from 369 donors through four organ procurement organizations) that were subsequently transplanted into recipients. The team found that biopsy-reported kidney injury was modestly associated with a delay in organ function in the first week after transplantation, but only for a subgroup of donor kidneys already known to be at high risk for this early outcome. The investigators also found that donor kidney biopsies frequently underreported acute kidney injury with substantial

variability.

"Biopsies are listed as the primary reasons for discarding deceased-donor kidneys; however, as they currently relate to reported acute kidney injury, they provide little utility for determining the overall risk of delayed organ function or even premature organ failure," said Dr. Parikh.

In another study, Bertram Kasiske, MD (Scientific Registry of Transplant Recipients and Hennepin County Medical Center) and his colleagues compared the results of biopsies from kidneys that were discarded with the results of biopsies from comparable kidneys that were successfully transplanted. In particular, the researchers compared biopsies of both kidneys from the same donor, when one kidney was transplanted and the other was discarded. The analysis included biopsy reports from 83 kidneys discarded due to biopsy findings, 83 contralateral transplanted kidneys from the same donor, and 83 deceased donors randomly matched to cases by donor risk profile.

The team found that there was a large degree of overlap between the results of biopsies from kidneys that were discarded and kidneys that were transplanted. The researchers also found that the quality of the biopsies used in acceptance decisions was low. The percentage of glomeruli (the filtering units of the kidney) that were scarred was most often used to decide whether kidneys were discarded or transplanted; however, this value was highly variable, even in biopsies from the same kidney.

Graft survival at one year was 80% for kidneys contralateral to discarded kidneys. This compares with one-year graft survival of 92% among all deceased donor kidney transplants in the Scientific Registry of Transplant Recipients. "If the discarded kidneys had been transplanted with the same graft survival as the transplanted kidneys from the

opposite side, many patients may have benefited," said Dr. Kasiske. "Altogether these results question whether routine procurement biopsies result in discarding kidneys that could be acceptable for many of the patients who die waiting for a kidney transplant," he added.

In an editorial accompanying Dr. Kasiske's article, Sayeed Khan Malek, MD (Brigham and Women's Hospital) wrote, "When the biopsy findings are consistent with the clinical evaluation of the donor, they are useful in making the determination about transplanting the kidney. However, biopsy findings when considered in isolation are of limited value and should be interpreted with caution when making the decision to turn down a potentially transplantable kidney."

More information: The article, entitled "Pre-implant Histologic Acute Tubular Necrosis and Allograft Outcomes," will appear online at cjasn.asnjournals.org/ on February 20, 2014.

The article, entitled "The Role of Procurement Biopsies in Acceptance Decisions for Kidneys Retrieved for Transplant," will appear online at cjasn.asnjournals.org/ on February 20, 2014.

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