

Researchers find chronic injury in kidneys of healthy adults

May 3 2010

Mayo Clinic researchers have found that the kidneys of healthy adults show signs of chronic mild injury that increase with age. This damage is present even though the adults showed no clinical signs of kidney disease. The findings are reported in the current issue of the, *Annals of Internal Medicine*.

"This was a surprise," says Andrew Rule, M.D., M.Sc., a Mayo Clinic nephrologist and epidemiologist who led the study. "These patients' kidneys are functioning normally, and this damage doesn't show up on the tests doctors routinely use to assess kidney health. It means we need to come up with new tests to detect mild kidney injury more accurately."

The medical records of 1,203 people who donated kidneys at Mayo Clinic from 1999 to 2009 were used for the cross-sectional study. The donor kidneys were examined with a [needle biopsy](#) once they were transplanted into the recipient as part of a routine procedure to gather baseline information about the new kidney.

The researchers looked at four signs of nephrosclerosis, or chronic kidney injury: glomerulosclerosis (scarring of the kidney's filtration units), tubular atrophy (loss of the tubes that process urine), interstitial fibrosis (general scarring of the [kidney tissue](#)), and arteriosclerosis (narrowing of tiny blood vessels).

Researchers discovered that the percentage of donors with nephrosclerosis ranged from 2.7 percent for men and women ages 18

years to 73 percent for those ages 70 years. The greater damage with older age was not explained by differences in kidney function or risk factors for kidney disease.

"Even though there are signs of damage, the kidneys were functioning within normal parameters," says Dr. Rule. "These findings do not mean that older people shouldn't donate kidneys. As far as we know, this mild kidney injury is an inevitable consequence of aging. Instead, we need an age-specific cut point for kidney function to identify early kidney disease. Right now, doctors use the same cut point for a 20-year-old as for a 70-year-old. This does not take into consideration the normal decline in kidney function that comes with aging. With older age there may be decreased demand for kidney function since the changes in kidney function do not reflect kidney injury on biopsy."

Dr. Rule is working with an international team to develop a new test for nephrosclerosis. He says that people can lessen damage to their kidneys by preventing and treating diabetes and controlling their blood pressure. "Even when [kidney function](#) tests are normal, people with high blood pressure have kidneys that look eight years older on biopsy than the kidneys of people with normal [blood pressure](#)," Dr. Rule says.

More information: <http://www.annals.org/>

Provided by Mayo Clinic

Citation: Researchers find chronic injury in kidneys of healthy adults (2010, May 3) retrieved 25 April 2024 from

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