

Urine protein may be present before hypertension diagnosis in at-risk adolescents

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A protein that is an early indicator of kidney dysfunction in adults may predict hypertension in black adolescents, Medical College of Georgia researchers have found. The results of the study are published in the February issue of *Hypertension*, a journal of the American Heart Association. Credit: Medical College of Georgia

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“Microalbuminuria, excessive amounts of albumin in the urine, is a common problem among diabetics,” says Dr. Gregory Harshfield, director of the Medical College of Georgia’s Georgia Prevention Institute. “For that reason, the few studies that have looked at adolescent patients have been focused on sick populations and even fewer have examined the phenomenon in healthy adolescents. What we were looking to find was the prevalence of the problem in a healthy population of children and adolescents and the impact of race, sex, sodium-handling and blood pressure on microalbuminuria.”

Dr. Harshfield and his co-investigators, Dr. Coral Hanevold, a former MCG pediatric nephrologist now at the University of Washington in Seattle, and Dr. Jennifer Pollock, an MCG pharmacologist, studied 317 healthy teens age 15-18. The results are published in the February issue of *Hypertension*, a journal of the American Heart Association.

The subjects were placed on a three-day sodium-controlled diet prior to testing on day four. Testing consisted of a two-hour baseline period, a one-hour stress period and a two-hour post-stress period. Urine samples were obtained at the end of each hour. Levels of microalbumin were determined following the first-hour baseline period.

Researchers found that the black teens had a 10 percent higher rate of albumin in their urine than their white counterparts, despite the fact that both groups had normal blood pressure. Those results suggest that kidney damage in these high-risk youths is apparent even before the development of high blood pressure. The black girls had a 22 percent higher albumin excretion rate than white girls.

The higher levels correspond to a tendency to retain sodium after stress, Dr. Harshfield says, noting that sodium retention is normal during stress but should normalize after the stressor has passed.

“What we’ve shown is that children and adolescents, particularly black children, can display reduced kidney function prior to the onset of hypertension. Therefore, it would be prudent to measure levels of microalbuminuria in high-risk patients.”

Source: Medical College of Georgia

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