The Edge of Chaos Congratulates Dr. Muntner and Team!

Dr. Paul Muntner, along with his research team, released findings relating to treatment-resistant hypertension, which were published in Associations of Schools of Public Health Newsletter. Dr. Muntner and his group are housed at The Edge of Chaos, which is a creative innovation space for the School of Public Health at UAB.

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UAB Investigates Geographic and Racial Differences in REGARDS Study

Studies suggest that treatment-resistant hypertension is common and increasing in prevalence among U.S. adults. Although hypertension is a risk factor for end-stage renal disease (ESRD), few data are available for the association between treatment-resistant hypertension and ESRD risk. In a prospective cohort study, PhD student Ms. Rikki M. Tanner, and professor Dr. Paul Muntner, in the department of epidemiology at the University of Alabama at Birmingham along with department colleague assistant Dr. Ryan Irvin, Dr. David A. Calhoun, and Dr. Suzanne Oparil, all professors in the division of cardiovascular disease, and Dr. Emmy K. Bell, assistant professor, Dr. David G. Warnock, professor, and Dr. Orlando M. Gutiérrez, assistant professor in the division of nephrology analyzed data from 9,974 REGARDS (Reasons for Geographic and Racial Differences in Stroke) Study participants treated for hypertension without ESRD at baseline.
Treatment-resistant hypertension was defined as uncontrolled blood pressure (BP) with concurrent use of three antihypertensive medication classes including a diuretic or use of four or more antihypertensive medication classes including a diuretic regardless of BP. Incident ESRD was identified by linkage of REGARDS Study participants with the United States Renal Data System. During a baseline in-home study visit, BP was measured twice and classes of antihypertensive medication being taken were determined by pill bottle inspection.

Researchers found that, during a median follow-up of 6.4 years, there were 152 incident cases of ESRD: 110 ESRD cases among 2,147 with treatment-resistant hypertension and 42 ESRD cases among 7,827 without treatment-resistant hypertension. The incidence of ESRD per 1,000 person-years for hypertensive participants with and without treatment-resistant hypertension was 8.86 and 0.88, respectively. After multivariable adjustment, the HR for ESRD comparing hypertensive participants with versus hypertensive participants without treatment-resistant hypertension was 6.32. Of participants who developed incident ESRD during follow-up, 72 percent had treatment-resistant hypertension at baseline.

The team concluded that individuals with treatment-resistant hypertension are at increased risk for ESRD and that appropriate clinical management strategies are needed to treat treatment-resistant hypertension in order to preserve kidney function in this high-risk group. The article, “Incident ESRD and Treatment-Resistant Treatment Hypertension: The Reasons for Geographic and Racial Differences in Stroke (REGARDS) Study”, was published in the most recent *American Journal of Kidney Diseases.*

[Photo: Dr. Paul Muntner (above) and Ms. Rikki M. Tanner]

Dispatch from the Edge

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