PRESS RELEASE

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SHOULD POLYCYSTIC KIDNEY DISEASE PATIENTS BE SCREENED FOR BRAIN ANEURYSMS?

Highlights

- Brain aneurysms were detected by pre-symptomatic screening in 9% of patients with autosomal dominant polycystic kidney disease, more frequently in those with a history of hypertension and smoking.
- Very few patients experienced aneurysmal ruptures, but the overall rupture rate was approximately 5 times higher than in the general population.

Washington, DC (July 30, 2019) — Autosomal dominant polycystic kidney disease (ADPKD) is characterized by progressive development of kidney cysts, as well as abnormalities outside the kidneys, including brain aneurysms—or weaknesses in blood vessels in the brain that balloon and fill with blood and may later rupture. A new study appearing in *CJASN* investigated whether patients with ADPKD should be routinely screened for brain aneurysms.

For the study, Vincente E. Torres, MD, PhD (Mayo Clinic) and his colleagues examined the medical records of 812 patients with ADPKD who were evaluated between 1989 and 2017 and underwent brain imaging tests despite having no neurological symptoms.

Among the major findings:

- 94 brain aneurysms were diagnosed in 75 of the 812 (9%) patients who underwent screening. None of the aneurysms ruptured over an average follow-up of 9 years.
- Gender, age, race, and genetics related to ADPKD were similar in the groups with and without aneurysms, but hypertension and a history of smoking were more frequent in the aneurysm group.
- 29% of patients with aneurysms vs. 11% of those without aneurysms had a family history of subarachnoid hemorrhage, a type of stroke caused by bleeding into the space surrounding the brain.
- Among patients who had evidence of aneurysms at the initial screening, new brain aneurysms were detected in 5 patients during an average follow-up of 8 years, and none of the aneurysms ruptured.

- Among 135 of the 737 patients with no brain aneurysms detected at the first screening who underwent additional screening, 3 patients developed aneurysms over an average follow-up of 7 years, and 2 patients had a brain aneurysm rupture. Both patients had significant risk factors for brain aneurysm development and rupture.

The investigators noted that their results do not allow a firm conclusion on whether widespread or selective screening for brain aneurysms is beneficial in ADPKD. A large prospective study would be necessary to determine the benefits and costs of such strategies.

“Our approach has been to recommend screening for patients with ADPKD who have a family history of aneurysm. We also recommend screening to patients with ADPKD before major elective surgeries (including transplantation), those with high risk occupations, and those who after being properly informed on the available data wish to be screened for reassurance,” said Dr. Torres. “We educate our patients on the importance of correcting conditions that have been associated with aneurysmal development and/or rupture, particularly smoking and inadequately controlled hypertension. The results our study do not provide a reason for changing our current approach”.

Study co-authors include Irina M. Sanchis, MD, Shehbaz Shukoor, MD, Maria V. Irazabal, MD, Charles D. Madsen, CCRP, Fouad T. Chebib, MD, Marie C. Hogan, MD, PhD, Ziad El-Zoghby, MD, Peter C. Harris, PhD, John Huston III, MD, and Robert D. Brown, Jr., MD.

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The article, entitled “Pre-symptomatic Screening for Intracranial Aneurysms in Patients with Autosomal Dominant Polycystic Kidney Disease,” will appear online at http://cjasn.asnjournals.org/ on July 30, 2019, doi: 10.2215/CJN.14691218.

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