Background: Fibromuscular dysplasia (FMD) is an uncommon vascular disease that may result in stenosis, dissection, or aneurysm. It is unclear how FMD patients who develop an arterial aneurysm differ from those who do not.

Methods: Patients enrolled in the FMD Registry from 10 U.S. sites were categorized into two cohorts: those with known arterial aneurysms and those without.

Results: Of the 615 patients in the FMD Registry, 559 patients had sufficient data for comparison. 124 (22.2%) of these 559 FMD patients reported an arterial aneurysm. The eight most common aneurysm locations were the renal (34.5%), carotid (24.5%), celiac (14.5%), aortic (13.6%), vertebrobasilar (13.0%), intercostal (5.5%), mesenteric (5.5%), and aortic (3.6%). Forty patients (36.4%) had more than one aneurysm, with a maximum of 5. FMD patients with aneurysms were more likely to have a greater history of headache or hypertension. There were also no significant differences between FMD patients with aneurysms and those without when we queried for family history of hypertension, aneurysm or sudden death. Within the FMD aneurysm cohort we recorded a total of 138 procedures (72 patients), of which 33.3% were balloon angioplasties alone, 15.2% were aneurysm embolizations, 12.3% were balloon angioplasties with stenting, and 13.6% were balloon angioplasties with stenting.

Conclusions: Approximately 1 in 5 FMD patients reported an aneurysm. Male FMD patients were more likely to develop an aneurysm than female FMD patients. FMD patients with aneurysms had earlier onset of hypertension and higher prevalence of subarachnoid hemorrhage, and were more likely to have FMD identified in multiple vascular beds, especially with mesenteric and intracranial carotid artery involvement. Given the high prevalence of arterial aneurysms in this population, physicians should consider screening FMD patients for occult aneurysms. However, further research is needed to more effectively recognize FMD patients as the greatest risk for aneurysm formation and to responsibly treat those FMD patients with known arterial aneurysms.

Prevalence of Arterial Aneurysms in Fibromuscular Dysplasia: A Report from the United States Registry for Fibromuscular Dysplasia
Jordan Gavín, Xiaokui Gu, Jeffrey Olin, Heather Gornik, Soo Hyun Kim, Bruce Gray, Michael Jaff, Robert McBane, Barry Katzen, Alan Matsumoto, Christopher White, Pamela Mace, Eva Kline-Rogers, James Froelich.