Submitting an Abstract for STATGEN2024

Presentation title:

Assessing the Evidence for a Causal Effect of Fibromuscular Dysplasia on Chronic Kidney and Biomarkers of Kidney Function: A Mendelian Randomization Study

Abstract (max 1200 characters):

Fibromuscular dysplasia (FMD) is a noninflammatory and nonatherosclerotic disease of artery walls that often affects medium-sized artery beds, including those of the renal arteries1–3. Multiple studies implicated renal artery FMD in impaired kidney function4–7. We sought to quantify causal effects of FMD on chronic kidney disease (CKD) in a two-sample Mendelian randomization study with GWAS summary statistics. We used genetic instruments for FMD from a meta-analysis of six genome-wide association studies of multifocal FMD8. For each putative outcome variable, we performed a two-sample Mendelian randomization analysis with inverse-variance weighted, weighted median, MR-Egger, weighted mode, and simple mode methods. We obtained association effect estimates for putative outcomes from publicly available summary statistics from UK Biobank GWAS9. We considered three different p-value thresholds when choosing relevant SNP instruments for MR analyses. All five methods showed no evidence of a causal effect of FMD on CKD. To further evaluate our findings, we performed sensitivity analyses to assess evidence of horizontal pleiotropy and other sources of confounding10,11.

## References

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