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 arteries[1–3]. Multiple studies and case reports have implicated renal artery FMD in impaired kidney function[4–7]. We sought to quantify causal effects of: FMD on chronic kidney disease. We used publicly available summary statistics in a two-sample Mendelian randomization study. Specifically, we used genetic instruments for FMD from a meta-analysis of six genome-wide association studies of multifocal FMD[8]. 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 GWAS[9]. We considered three different p-value thresholds (10^{-8}, 10^{-7}, 10^{-6}) when choosing relevant SNP instruments for the MR analyses. All five methods showed no evidence of a causal effect of FMD on chronic kidney disease. To further investigate our findings, we performed sensitivity analyses in efforts to assess evidence of horizontal pleiotropy and other sources of confounding[10,11].

References

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