Key Summary of Published Article

Group IIA Secretory Phospholipase A_2 and Incident Cardiovascular Disease: An Analysis from the JUPITER Trial

Background

- Inflammation contributes to progression of atherosclerotic cardiovascular disease (CVD). A key regulator of inflammation is Group IIA secretory phospholipase A2 (sPLA$_2$-IIA).
- Most studies that have examined the association between sPLA$_2$-IIA and outcomes have done so in patient populations with established CVD (ie, secondary prevention settings).
- However, the association between sPLA$_2$-IIA and outcomes in a primary prevention setting has not been well studied.
- **Objective:** Investigators 1) evaluated the association of sPLA$_2$-IIA mass with incident CVD events and 2) conducted a genome-wide association study (GWAS) to identify genetic variants associated with sPLA$_2$-IIA mass.

Methods

- The JUPITER trial (Justification for the Use of Statins in Prevention: An Intervention Trial Evaluating Rosuvastatin) included participants with LDL cholesterol <130 mg/dL but considered at risk of CVD based on chronic inflammation: high-sensitivity C-reactive protein (hsCRP) ≥2 mg/L.[1]
- sPLA$_2$-IIA mass was measured by an enzyme immunoassay in blood specimens taken at baseline (n=11,269) and 1 year later (n=9,620).
- The correlation of single-nucleotide polymorphisms (SNPs) with sPLA$_2$-IIA mass was evaluated in a subset of trial participants (n=6,692).
- Multivariable Cox regression analyses were used to evaluate the association of sPLA$_2$-IIA mass with CVD events and the association of SNPs with sPLA$_2$-IIA mass and CVD events.

Results

- Among the trial population, 313 first CVD events occurred during the follow-up period of up to 5 years.
- Baseline sPLA$_2$-IIA mass was associated with increased risk of CVD events.
  - After adjusting for traditional cardiometabolic risk factors, the hazard ratio (HR) for CVD event risk was 1.22 per standard deviation increase in sPLA$_2$-IIA mass (*P*=0.002).
  - This association was slightly attenuated after additionally adjusting for hsCRP (HR: 1.18, *P*=0.01).
- The SNP rs11573156C in the gene encoding sPLA$_2$-IIA had the strongest correlation with sPLA$_2$-IIA mass; however, it was not associated with greater CVD event risk (HR: 1.11, *P*=0.34).

Conclusions

- Among the JUPITER trial participants, sPLA$_2$-IIA mass at baseline was independently associated with the risk of future CVD events.
- Further study is needed to better understand whether sPLA$_2$-IIA should be targeted pharmacologically for CVD event risk reduction.

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