

Ophthalmic artery Doppler and carotid intima-media thickness 3–6 years postpartum in women with and without a history of placental insufficiency

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Introduction

Placental insufficiency, including preeclampsia (PE) and fetal growth restriction (FGR), is associated with increased long-term cardiovascular risk. The aim was to assess the impact of PE, FGR and sFlt-1/PIGF on Ophthalmic artery Doppler and carotid intima-media thickness 3–6 years postpartum

Methods

Cross-sectional study of 354 women recruited during pregnancy (2018–2021) and re-evaluated 3–6 years postpartum. PE and FGR were defined from pregnancy data; sFlt-1/PIGF ≥ 38 defined angiogenic imbalance. Ophthalmic artery Doppler and carotid intima-media thickness were assessed by a single operator, and associations were analyzed using multivariable linear regression adjusted for maternal covariates.

Results

354 women included, 148 (42%) with a history of PE/FGR. 90/249 (36%) had a sFlt-1/PIGF ≥ 38 . Both a history of placental dysfunction and angiogenic imbalance during pregnancy were independently associated with a higher OA-PSV ratio 3–6 years postpartum [0.75 vs. 0.69, $p=0.03$] and [0.76 vs. 0.70, $p=0.03$], respectively. The association was strongest in women with both conditions combined. No significant differences were found in carotid intima-media thickness.

Conclusion

Both a history of angiogenic imbalance and a clinical placental dysfunction (particularly PE) were associated with increased ophthalmic artery peak systolic velocity ratio 3-6 years postpartum.

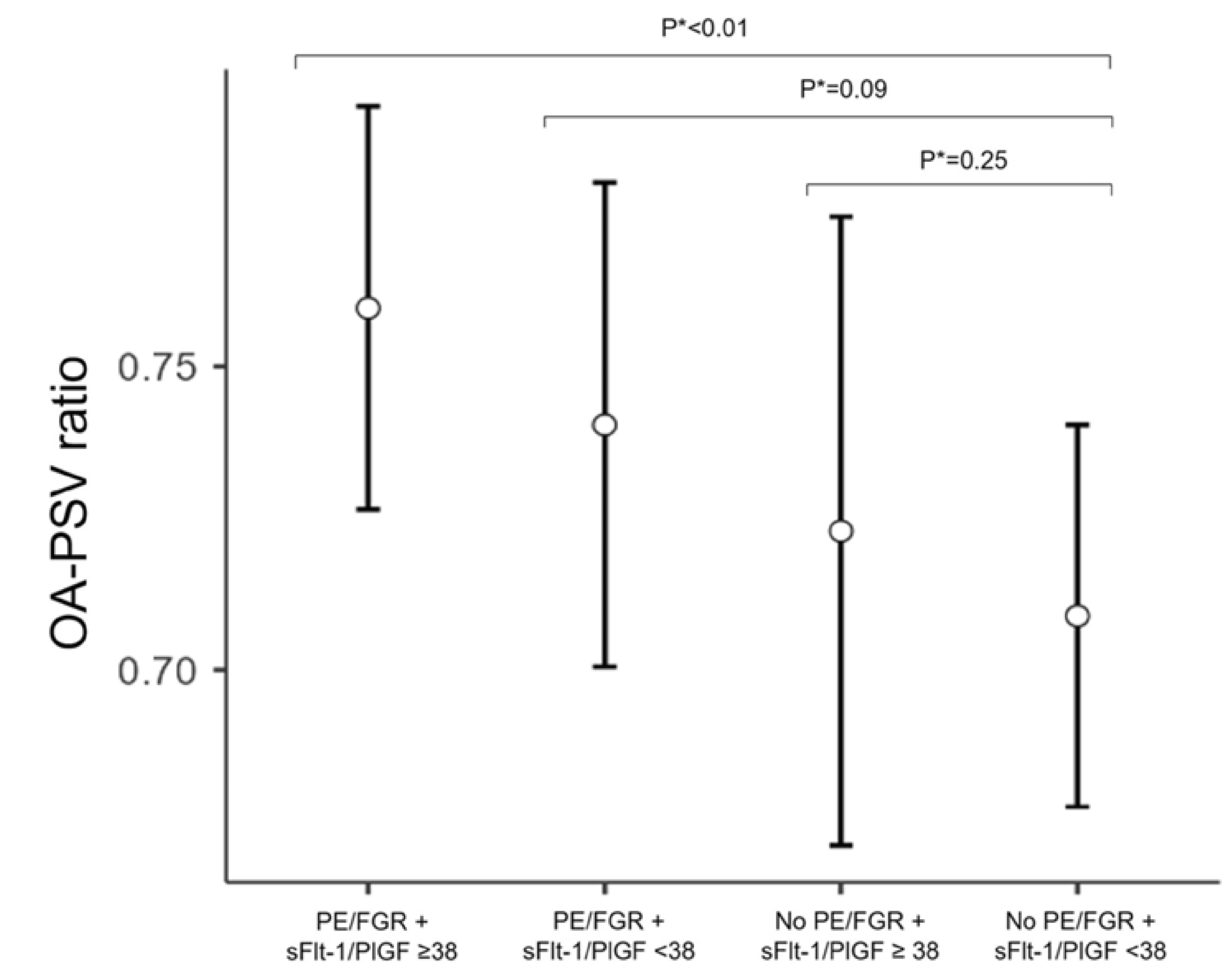


Figure 1: Adjusted OA-PSV ratio by clinical history of placental dysfunction and angiogenic profile. Estimated marginal means of ophthalmic artery peak systolic velocity ratio obtained from an adjusted multivariate linear regression model.

**Compared with individuals with no PE/ FGR + sFlt-1/PIGF < 38 .*