

E Poster number EP16.02**Maternal ophthalmic artery Doppler reflects disease severity in gestational diabetes: a non-linear association**

Carman Wing Sze Lai, Brett Dyer, Conrado Ragazini, Cristiane Paganoti, Luhao Han, Hasini Rathnayake, Elsa Suk Fan Chan, Man Ho Kwok, Olivia Holland, Professor Fabricio da Silva Costa
Maternal Fetal Medicine Unit, Gold Coast University Hospital. School of Medicine and Dentistry, Griffith University, Australia

Objectives

We aimed to assess whether ophthalmic artery (OA) Doppler indices at 26–28 weeks are associated with severity of gestational diabetes (GDM) and adverse perinatal outcomes.

Methods

This was a secondary analysis of pregnant women with GDM recruited into our prospective cohort study, the Placental Health Study. Women with GDM who underwent OA Doppler assessment at 26–28 weeks were included. Candidate predictors were peak systolic velocity 2 (PSV2) and peak systolic velocity (PSV) ratio. Outcomes were (1) GDM treated with medication and (2) a composite adverse perinatal outcome comprising macrosomia (birthweight ≥ 4 kg), large-for-gestational-age (>90 th percentile for gestational age), neonatal hypoglycaemia (<2.6 mmol/L), or neonatal intensive care unit admission. Logistic regression with restricted cubic splines was used to assess overall associations and explore non-linearity.

Results

A total of 114 women with GDM were included. Of these, 59 had pharmacological treatment and 55 were managed with diet alone. There was a significant overall association between the PSV ratio and the composite outcome ($p=0.042$), with a pattern potentially suggestive of non-linearity ($p=0.053$). Compared with the median, PSV ratio at the 10th percentile there was increased odds of the composite perinatal outcome (OR 3.45, 95% CI 1.30–9.20), whereas the association at the 90th percentile was weaker and not statistically significant (OR 1.34, 95% CI 0.44–4.05). PSV ratio was not significantly associated with medication requirement ($p=0.104$). PSV2 was not associated with the composite outcome ($p=0.45$) or medication requirement ($p=0.86$).

Conclusion

Maternal OA PSV ratio at 26–28 weeks was associated with adverse perinatal outcomes in GDM, with evidence suggesting greater risk at lower PSV ratio values. These findings suggest that OA Doppler may reflect altered maternal vascular adaptation in GDM but require confirmation in larger prospective studies that adjust for established prognostic factors.

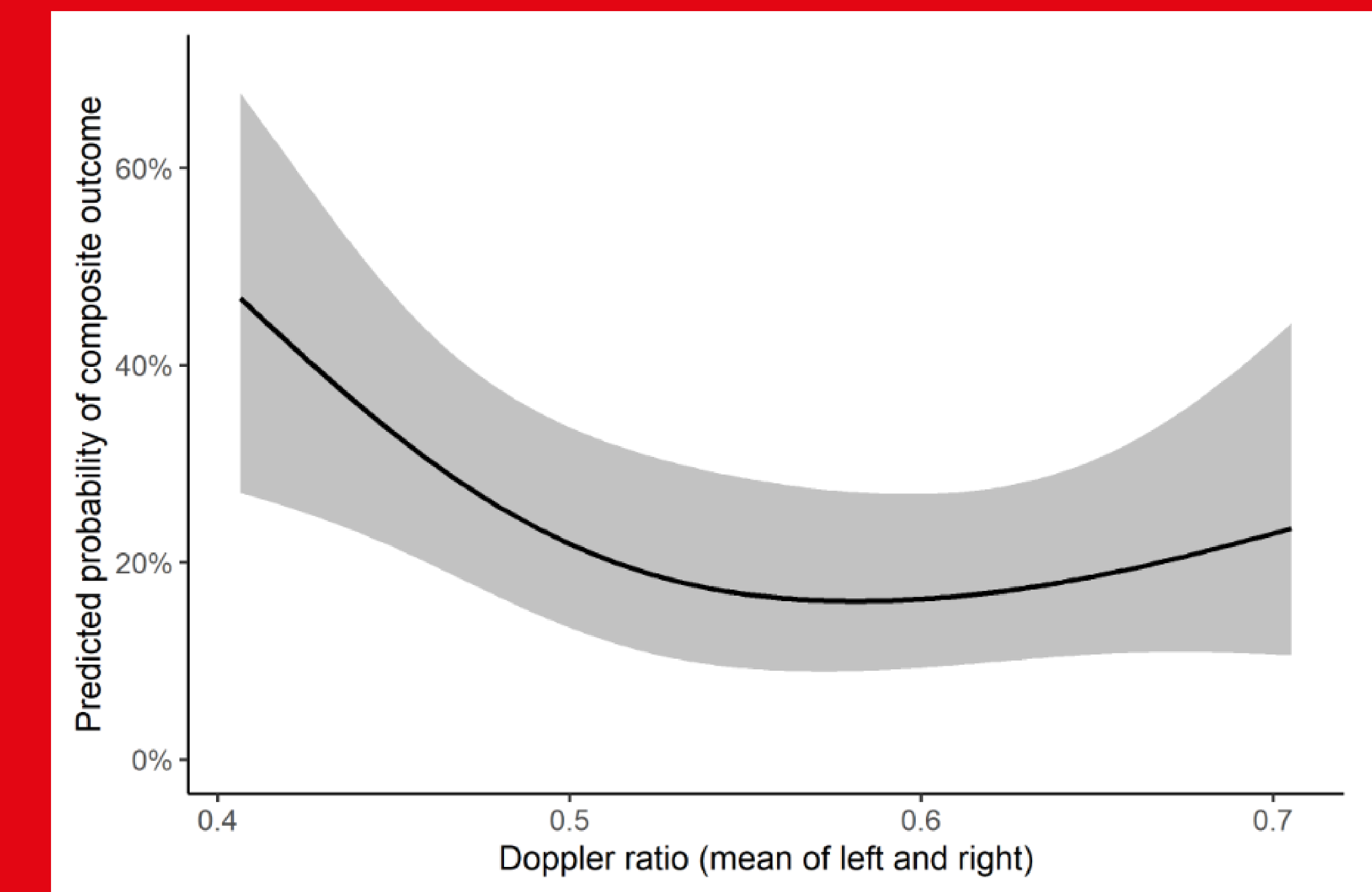


Figure 1. PSV ratio demonstrated a significant overall association with the composite adverse outcome ($p=0.042$), with some evidence of non-linearity ($p=0.053$). Predicted probability of adverse outcome was highest at lower PSV ratio values and lowest at mid-range values.