Birth Factors and Retinal Vascular Caliber in a Twin Study

To the Editor:

I read with interest the data from the Twins Eye Study in Tasmania demonstrating associations between birth factors and retinal vascular caliber. From these findings, the authors suggest that fetal growth may have adverse influence on the microcirculation.

Low growth parameters at birth may not be specific and sensitive markers of fetal growth restriction. Many newborns with low birth weight are, in fact, appropriately grown preterm infants. As shown in Table 1 of Reference 1 37% of the dizygotic twins and 47% of the monozygotic twins were born prematurely in the study. Because birth weight, length, and head circumference are all strongly related to gestational age, it may be more appropriate to use gestational age as a continuous variable in the regression analysis.

Furthermore, it is interesting to note that the most compelling and significant finding was the association of birth length, rather than birth weight, with retinal arteriolar caliber. As a major cause of fetal growth restriction, placental insufficiency tends to affect birth weight more so than other birth measurements (birth length or head circumference). This pattern, nonetheless, is not reflected in the presented data. The reasons for this are unclear. The authors attempted to compensate the potential confounding effects of ocular magnification by adjusting for optic disc area, a parameter shown to be associated with variations in retinal vascular caliber. However, it may be better to use more direct and relevant measures of ocular magnification, such as axial length and spherical equivalent refraction, in the analysis.

Residual confounding from random errors in the measurement of retinal vascular caliber because of ocular magnification could have obscured some of the reported associations.

Disclosures

None.

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