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The authors report no conflict of interest.

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REPLY TO: TWIN–TWIN TRANSFUSION SYNDROME: NEED FOR MECHANISTIC STUDIES



TO THE EDITORS: We thank Professor Ross et al. for their interest in our publication “Early prognostic factors of outcomes in monochorionic twin pregnancy: systematic review and meta-analysis,”¹ and for kindly highlighting important areas of future research.

We agree that unbalanced placental vascular anastomoses are pivotal to the pathophysiology of twin–twin transfusion syndrome (TTTS). Computational and mathematical studies, including those performed by Professor Ross, have demonstrated that fluid mechanics are involved in TTTS and have improved knowledge surrounding TTTS. However, to our knowledge there have been no studies able to translate the models’ findings into real-life measurable parameters, as it is very difficult to visualize placental anastomoses, irrespective of type, using color flow or power Doppler, especially in the first trimester. Professor Christoph Lees is examining the use of advanced dynamic flow (ADF) and superb microvascular imaging (SMI) Doppler, although this is an early-stage research tool (personal communication).

The study by Nakata et al² that Professor Ross et al reference, which evaluates invasive intra-amniotic Doppler placental anastomoses blood flow measurement, received criticism regarding the lack of validation of the technique and

the findings,³ as far as the authors are aware, these findings have not been validated in real life, nor have the findings of the computational modeling studies. Thus the search continues for novel first-trimester predictive markers for TTTS, which is hampered by the lack of animal models. We are exploring other aspects of TTTS pathogenesis, by investigating the use of maternal serum analytes and microRNA as predictive tests, which would be evaluated in conjunction with ultrasound assessment.⁴ Currently, as there is no prevention for TTTS, even with the identification of a “high-risk” group, sequential ultrasound monitoring of the amniotic fluid deepest vertical pools would be required. ■

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