Thick artery-artery anastomoses delay the onset of selective fetal growth restriction in monochorionic diamniotic twins

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Objective
To investigate difference of placental characteristics between early- and late-onset selective fetal growth restriction (sFGR) in monochorionic diamniotic twins.

Methods
A total of 253 patients of sFGR between April 2013 and April 2020 were retrospectively analyzed. Placental characteristics of early- and late-onset sFGR were compared.

Results
The gestational age at diagnosis and delivery in the early-onset group were significantly less than the late-onset group [22.0 (16.9–23.9) and 28.4 (24.0,36.3) weeks, P < 0.001; 33.1±2.2 and 33.7±2.5 weeks, P = 0.025]. The birth weight of normal growth and growth-restricted fetuses in the early-onset group were less than the late-onset group [1990±422 and 2162±525 g, P = 0.044; 1320±409 and 1595±519 g, P = 0.001]. The birthweight discordance ratio in the early-onset group was greater than the late-onset group (0.34±0.12 and 0.29±0.13, P = 0.001). The early-onset group had a significantly lower prevalence of sFGR type I than the late-onset group (37.5% and 62.0%, P = 0.018). The early-onset group had a significantly higher prevalence of sFGR type III than the late-onset group (30.4% and 12.7%, P = 0.048). The early-onset group had a lower prevalence of thick artery-artery anastomoses than the late-onset group (37.5% and 62.0%, P = 0.006). The placental territory discordance ratio in the early-onset group was higher than the late-onset group [0.60 (0.01,0.80) and 0.50 (0.01,0.88), P = 0.018].

Conclusion
Unequal placental territory is the cause for most of the late-onset sFGR, thick artery-artery anastomoses may delay the onset time of these cases of sFGR.